October 31, 2025

Ms. Lisa Felice
Executive Secretary
Michigan Public Service Commission
7109 West Saginaw Highway
Post Office Box 30221
Lansing, MI 48909

RE: MPSC Case No. U-21985 – In the matter of the application of Consumers Energy Company for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other relief.

Dear Ms. Felice:

Enclosed for electronic filing in the above-captioned case, please find the **Redacted Versions of Consumers Energy Company's Application and Supporting Testimony and Exhibits of Company witnesses Richard T. Blumenstock, Jason R. Coker, Adam J. Monroe, and Angela Thompkins**.

Confidential versions of the Application Attachments and Testimony and Exhibits of Company witness Blumenstock will be filed under seal with the Executive Secretary of the MPSC.

This is a paperless filing and is therefore being filed only in PDF. I have included a Proof of Service showing electronic service upon the parties.

Sincerely,

Bret Totoraitis
Digitally signed by Bret A. Totoraitis
Date: 2025.10.31 15:05:57 -04'00'

Bret A. Totoraitis
Phone: 517-788-0835
Email: bret.totoraitis@cmsenergy.com

cc: Parties per Attachment 1 to Proof of Service

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

APPLICATION

Consumers Energy Company ("Consumers Energy" or the "Company") hereby applies for (i) approval, pursuant to MCL 460.6q, of the sale of its 13 river hydroelectric generating plants (the "Facilities") to Confluence Hydro, LLC ("Confluence"), (ii) approval, pursuant to MCL 460.6j, of the Power Purchase Agreement ("PPA") between Consumers Energy and Confluence, including a Financial Compensation Mechanism ("FCM") on PPA payments, and (iii) approval of deferred accounting treatment for the gain on the sale and certain offsetting expenses related to the sale.

As discussed in more detail in this Application and in the Company's testimony and exhibits, the transaction will yield significant benefits to Consumers Energy's customers because it allows Consumers Energy to transfer substantial future operational and environmental liabilities and risk to Confluence and because it is the lowest-cost option for the future of these plants. The transaction also benefits the state of Michigan and the numerous local communities where the Facilities are located by preserving the dams and related impoundments, which provide important economic and recreational benefits in those communities and to the state. The sale of these Facilities provides the only viable option concerning the future of these Facilities in which

customers, the communities, the employees, the buyer, the seller, and the state of Michigan all win. In support of this Application, Consumers Energy respectfully states the following:

I. BACKGROUND

1. Consumers Energy currently owns and operates the Facilities, which were built between 1905 and 1936, across five river systems. The facilities have been generating power for Consumers Energy's customers for over one hundred years, on average. The plants provide approximately 132 MW of nameplate capacity and have approximately 440,000 MWh of average annual energy production. They have operating licenses issued by the Federal Energy Regulatory Commission ("FERC"), which are set to expire between June 2034 and May 2041. As the relicensing process – which can take up to seven years to complete – approached, Consumers Energy began evaluating the future of the Facilities. The aging plants require significant capital investments in order to maintain their FERC operating licenses. In Consumers Energy's 2022 electric rate case, Case No. U-21224, numerous parties, including the MPSC Staff, questioned the economic justification for making those required investments to keep the Facilities operating. In a settlement agreement approved by the Commission in Case No. U-21224, Consumers Energy agreed to conduct a disposition analysis of the Facilities, including an analysis of the potential to sell the plants.

2. Consumers Energy engaged a third-party engineering firm to provide an independent assessment of the disposition options, which identified three principal options: (i) relicensing and continued operation, (ii) sale, and (iii) decommissioning. The assessment included development of business models supporting each option so that the financial impact was known. The Company also hosted numerous community engagement opportunities, including public meetings and establishing local prosperity groups to gather feedback, beginning in 2022 and continuing throughout the assessment process. The Company worked

closely with communities near the facilities through this entire process. The independent assessment ultimately supported sale of the Facilities as the best available option. Likewise, the Company's filing in this case, based on Consumers Energy's own business case analysis, demonstrates that selling the Facilities is the lowest cost option with the least cost risk. Community input was also significant in reaching the decision to sell the Facilities.

3. In August of 2023, the Company announced its intent to conduct a Request for Proposals ("RFP") to purchase the Facilities. In February of 2024, the Company issued a Stage 1 RFP with bids due in March of 2024. Stage 1 focused on bidder qualification and indicative transaction pricing. Forty-one counterparties expressed interest in participating in the RFP. In March of 2024, the Company received 15 bids. The Company reviewed the bids through a rigorous evaluation and accepted seven of those bids to continue to Stage 2 of the RFP, which began in April of 2024. The eight bids that Consumers Energy rejected did not meet critical criteria in the evaluation. Stage 2 of the RFP involved detailed due diligence and submission of final transaction pricing. In August of 2024, two of the seven accepted bidders submitted a final bid. The other five bidders electively decided to withdraw from the RFP. The Company commenced negotiations in October of 2024 and concluded negotiations in August of 2025 at which time, the Company signed a Purchase and Sales Agreement ("PSA"), a PPA, and other related agreements with Confluence.

II. PARTIES TO THE TRANSACTION

4. Consumers Energy is, among other things, engaged as a public utility in the business of generating, purchasing, distributing, and selling electric energy to approximately 1.9 million retail customers in the state of Michigan. The retail electric system of Consumers Energy is operated as a single utility system in which the same rates and tariffs are applicable.

5. Consumers Energy's retail electric business is subject to the jurisdiction of the Michigan Public Service Commission ("MPSC" or the "Commission") pursuant to certain provisions of 1939 Public Act ("PA") 3, as amended, MCL 460.1 *et seq*; 1909 PA 106, as amended, MCL 460.551 *et seq*; and 1909 PA 300, as amended, MCL 462.2 *et seq*; and the Commission's Rules of Practice and Procedure, as amended, 1992 AACS, R460.17701 *et seq*.

6. Confluence is a wholly owned subsidiary of Hull Street Energy ("Hull Street"). Hull Street is a private equity firm that has significant experience owning, operating, and investing capital in power generation assets across North America, including river hydroelectric generation. The Hull Street team has a long track record of owning and operating hydroelectric facilities across North America, including acquisition and improvement of 47 hydroelectric assets within the past decade. Hull Street currently owns one hydroelectric dam, Boott Hydro located in Lowell, Massachusetts. Hull Street is a member of the National Hydropower Association which keeps them informed of industry standards and best practices

III. THE TRANSACTION

7. Consumers Energy has agreed to sell the Facilities and transfer associated liabilities to Confluence by entering into four primary and interdependent agreements with Confluence. The four agreements include the PSA, the PPA, a Regulatory Disallowance Agreement ("RDA"), and the Environmental Indemnity Agreement ("EIA"), all of which work together to effectuate the transaction.

8. Under the PSA, Consumers Energy will receive $13 from Confluence as the purchase price for the assets ($1 per facility), however, the majority of the value to Consumers Energy and its customers results from the transfer of substantially all liabilities, including environmental liabilities, associated with the Facilities. The EIA is necessary to effectuate Confluence's assumption of the environmental liabilities associated with the Facilities.

Consumers Energy's agreement to enter into a PPA for the output of the Facilities after the sale closes is a material part of the overall transaction. Under the PPA, Consumers Energy will pay Confluence a base PPA price of $160 per MWh[1] with a 2.5% annual escalation adjustment for the energy, capacity, and renewable energy credits ("RECs") associated with the energy produced at the facilities over the next 30 years. The PPA price ensures that Confluence will have sufficient annual revenues to fund capital and maintenance, and Confluence will be incented to safely and reliably operate the Facilities so that it can receive revenue, through the PPA price, for the entire term of the PPA. Finally, the RDA provides Confluence with security in the event of any future disallowance of payments under the PPA. Commission approval of all parts of the transaction are required in order for Consumers Energy and Confluence to successfully proceed to close the transaction.

9. The PSA also provides for the transfer of the Company's employees that support the Facilities to Confluence (or an affiliate of Confluence). This ensures that the Facilities will continue to operate with a staff composed of the same experienced employees that have supported the safe and reliable operation of the plants for many years.

10. The PPA qualifies for a financial incentive (referred to in this filing as the Financial Compensation Mechanism) under the provisions of MCL 460.6t(15) and MCL 460.1028(8) because Confluence is not affiliated with Consumers Energy and because the Facilities are renewable energy resources within the meaning of those statutes.

[1] The PPA with Confluence does not set the avoided cost rate for Consumers Energy under the Public Utilities Regulatory Policy Act of 1978, 16 USC 824a-3. FERC generally delegates authority to state regulatory agencies to establish avoided cost rates, subject to certain guidance found in federal regulations. See 18 CFR 292.304(e). Federal regulations expressly authorize state regulatory agencies to set avoided cost based on the results of annual competitive solicitations. 18 CFR 292.304(e)(1); see also 18 CFR 292.304(b)(8). The Commission adopted a competitive solicitation approach for setting Consumers Energy's avoided cost in its June 23, 2022 Order in Case No. U-21090. This PPA was not the product of that competitive solicitation process and was not entered for the purposes of acquiring new electric generation capacity.

11. The PSA requires Consumers Energy to obtain all required regulatory approvals on terms acceptable to both Consumers Energy and Confluence in their respective discretion as a condition precedent to closing the transaction, including the approval required from the MPSC for the sale under MCL 460.6q and approval of the PPA under MCL 460.6j. MCL 460.6q establishes a 180-day deadline for a final Commission decision on an application seeking approval of a qualifying asset sale under that statute. FERC approval is anticipated to take up to 18 months.

IV. FILING REQUIREMENTS UNDER MCL 460.6Q AND R 460.303

12. Together with this Application, Consumers Energy is filing the direct testimony and exhibits of Richard T. Blumenstock, Jason R. Coker, Adam J. Monroe, and Angela Tompkins, which will demonstrate, among other items, that the proposed sale: (i) will not have an adverse impact on the rates of Michigan customers affected by the sale; (ii) will not have an adverse impact on the provision of safe, reliable, and adequate energy service by Consumers Energy; (iii) will not result in the subsidization of a non-regulated activity through rates paid by customers of Consumers Energy; (iv) will not significantly impair Consumers Energy's ability to raise necessary capital or maintain a reasonable capital structure; and (v) is not otherwise inconsistent with the public interest. In fact, the proposed transaction will have favorable customer rate impacts when compared with decommissioning and relicensing the River Hydro Fleet. The Direct Testimony and Exhibits of Mr. Blumenstock, Mr. Coker, Mr. Monroe, and Ms. Tompkins are incorporated as part of this Application by reference.

13. For the Commission's convenience, Consumers Energy has prepared a key that identifies each filing requirement set forth in MCL 460.6q and the Commission's associated regulations, Mich Admin Code, R 460.303, and indicates where in the Company's filing each filing requirement may be found. The key is attached to this Application as Attachment A.

14. In accordance with MCL 460.6q(3)(b), which requires copies of the material acquisition documents, if available, Consumers Energy is filing the PSA, together with the other related transaction documents, and the PPA as Exhibits A-1 (RTB-1) Confidential and A-2 (RTB-2) Confidential to the Direct Testimony of Mr. Blumenstock. Certain provisions of the PSA and PPA are considered and treated as confidential information by Consumers Energy and Confluence. As such, the PSA and PPA are being filed under seal on a confidential basis pursuant to MCL 460.6q(10). The PSA and PPA are, however, being electronically filed in redacted form. The Company requests that the Commission direct the Administrative Law Judge to issue a Protective Order at the prehearing conference in this case in order to protect this confidential information. The Company is attaching a copy of the Commission's standard Non-Modifiable Protective Order as its proposed Protective Order in this case as Attachment B to this Application.

15. In accordance with MCL 460.6q(3)(e), which requires copies of the parties' public filings with other state or federal regulatory agencies regarding the same transaction, including any regulatory orders issued by the agencies regarding the same transaction, the Company includes its filings with FERC seeking (i) transfer of the licenses for each of the hydro plants included in the Facilities, (ii) amendment of the FERC licenses, and (iii) approval of the transaction under Section 203 of the Federal Power Act as Attachments C, D, and E, respectively. As of the date of this Application, no regulatory order has been issued by any agency regarding this transaction. Consumers Energy anticipates additional filings related to this transaction at the Federal Communications Commission and the Federal Trade Commission/Department of Justice at a future time. The Company will share those filings with the Commission once they have been filed with the respective agencies.

16. Consumers Energy's sale of the facilities meets all of the requirements of MCL 460.6q and the Commission's related administrative rules, R 460.303.

WHEREFORE, Consumers Energy Company requests that the Michigan Public Service Commission:

A. Make and publish its notice of opportunity to file comments and notice of hearing;

B. Give confidential treatment to the redacted confidential portions of the Purchase and Sale Agreements and the Power Purchase Agreement in accordance with MCL 460.6q(10) and direct the Administrative Law Judge to issue a Protective Order to protect the confidential information at the prehearing conference;

C. After notice and opportunity to file comment and for a hearing, approve the transaction between Consumers Energy and Confluence as proposed in the transaction documents, including the Purchase and Sales Agreement, the Power Purchase Agreement, and all other related agreements and attachments thereto within 180 days of the application as provided under MCL 460.6q(5);

D. Approve the Company's requested accounting treatment for the gain on the sale with offsets for expenses related to the transaction;

E. Affirm that the Power Purchase Agreement is eligible for a Financial Compensation Mechanism under the provisions of MCL 460.6t(15) and MCL 460.1028(8); and

F. Grant such other and further authority and approvals as may be lawful and proper.

Respectfully submitted,

CONSUMERS ENERGY COMPANY

Dated: October 31, 2025

By: _____

Srikanth Maddipati
Senior Vice President, Electric Supply
Consumers Energy Company

_____

Bret A. Totoraitis (P72654)
Evan B. Keimach (P83418)
One Energy Plaza
Jackson, Michigan 49201
Attorneys for Consumers Energy Company
(517) 788-0835

ATTACHMENT A

MCL 460.6q Filing Requirements Key

Statutory

MCL 460.6q(3)

(a) – Blumenstock Testimony, Section III (pages 15-21)

(b) – Exhibits A-1 (RTB-1) and A-2 (RTB-2)

(c) – Coker Testimony, pages 12-17; Exhibits A-10 (JRC-1) and A-11 (JRC-2); Blumenstock Testimony, page 34

(d) – Coker Testimony, pages 5-6

(e) – Application, Attachments C, D, and E

Administrative Rules

R 460.303(1)

(a) – Coker Testimony, page 4

(b) – Coker Testimony, page 4

(c) – Blumenstock Testimony, pages 31-32

(d) – Monroe Testimony, page 4

(e) – Blumenstock Testimony, page 4, Section I (pages 7-13), Section III (pages 15-21), Section IV (pages 21-31); Monroe Testimony, pages 8-11

(f) – Coker Testimony, pages 12-17; Exhibits A-10 (JRC-1) and A-11 (JRC-2); Blumenstock Testimony, page 34

(g) – Exhibits A-1 (RTB-1) and A-2 (RTB-2)

(h) – Blumenstock Testimony, Section I (pages 7-13), Section III (pages 15-21), Section IV (pages 21-31), pages 32, 34; Coker Testimony, pages 12-17; Exhibits A-10 (JRC-1) and A-11 (JRC-2)

(i) – Coker Testimony, pages 5-6

(j) – Application, Attachments C, D, and E

(k) – Coker Testimony, pages 4-7

(*l*) – Coker Testimony, pages 17-18

(m) – Coker Testimony, pages 17-18

(n) – Thompkins Testimony, pages 18-19

(o) – Blumenstock Testimony, page 33

(p) – Blumenstock Testimony, page 33

(q) – Coker Testimony, page 9

(r) – Coker Testimony, page 18

(s) – Coker Testimony, page 10

(t) – Blumenstock Testimony, page 33

(u) – Coker Testimony, pages 18-19

(v) – Monroe Testimony, page 4

(w) – Monroe Testimony, pages 7

(x) – Coker Testimony, pages 10

(y) – Blumenstock Testimony, page 33

(z) – N/A

ATTACHMENT B

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

PROTECTIVE ORDER

This Protective Order governs the use and disposition of Protected Material that any Party discloses to another Party during the course of this proceeding. This Protective Order protects non-public, confidential information and materials so designated by the Disclosing Party as Protected Material, as defined herein. Accordingly, it is ordered:

I. "Protected Material" and Other Definitions

A. "Protected Material" consists of trade secrets or confidential, proprietary, or commercially sensitive information provided in Disclosing Party's application, exhibits, discovery or audit responses, any witness' related exhibits and testimony, motions, objections, briefing, responses to an order issued by the presiding hearing officer or the Michigan Public Service Commission ("MPSC" or the "Commission), and any arguments of counsel describing or relying upon the Protected Material. Subject to challenge under Paragraph IV.A, Protected Material shall also consist of non-public confidential information and materials including, but not limited to, the following information disclosed during the course of this case if it is marked as required by this Protective Order:

1. To the extent permitted, information obtained under license from a third-party licensor, to which the Disclosing Party or witnesses engaged by the Disclosing Party is a licensee, that is subject to any confidentiality or non-

transferability clause. This information includes reports; analyses; models (including related inputs and outputs); trade secrets; and confidential, proprietary, or commercially sensitive information that the Disclosing Party or one of its witnesses receives as a licensee and is authorized by the third-party licensor to disclose consistent with the terms and conditions of this Protective Order.

2. Information that is protected as confidential in another jurisdiction that the Applicant provides utility service, and the source of the other jurisdiction's protective designation is made known to the Receiving Party.

B. The information subject to this Protective Order does not include:

1. Information that is or has become available to the public through no fault of the Receiving Party or Reviewing Representative and no breach of this Protective Order, or information that is otherwise lawfully known by the Receiving Party without any obligation to hold it in confidence;

2. Information received from a third party free to disclose the information without restriction;

3. Information that is approved for release by written authorization of the Disclosing Party, but only to the extent of the authorization;

4. Information that is required by law or regulation to be disclosed, but only to the extent of the required disclosure; or Information that is disclosed in response to a valid, non-appealable order of a court of competent jurisdiction or governmental body, but only to the extent the order requires.

C. "Applicant" refers to the filing party in this proceeding.

D. "Disclosing Party" means a Party producing Protected Material in this proceeding.

E. "Party" refers to the Applicant, MPSC Staff ("Staff"), Michigan Attorney General, or any other person, company, organization, or association that is granted intervention in this case under the Commission's Rules of Practice and Procedure, Mich Admin Code, R 792.10401 et al.

F. "Receiving Party" means any Party to this proceeding who requests or receives access to Protected Material. A Receiving Party is responsible for assuring that persons,

representatives, or agents under its control or supervision comply with this Protective Order.

G. "Reviewing Representative" means a representative of the Receiving Party who is:

1. An attorney who has entered an appearance in this proceeding for a Receiving Party;

2. An attorney, paralegal, or other employee associated, for the purpose of this case, with an attorney described in Paragraph I.G.1;

3. An expert or employee of an expert retained by a Receiving Party to advise, prepare for, or testify in this proceeding; or an employee or other representative of a Receiving Party with significant responsibility in this case.

H. "Nondisclosure Certificate" refers to Attachment 1 to this Protective Order.

Except as otherwise provided herein, the Reviewing Party and Reviewing Representatives will be required to sign Nondisclosure Certificates. However, Nondisclosure Certificates will not be required from administrative law judges, members of the Commission and its support staff, Staff (excluding consultants, third-party experts, agents or other similar persons), and Staff counsel, for whom by virtue of their employment are presumed to be bound by the terms of this Protective Order.

II. Access to and Use of Protected Material

A. This Protective Order governs the use of all provided Protected Material. This Protective Order protects: (i) the Protected Material; (ii) any copy or reproduction of the Protected Material made by any person; and (iii) any memorandum, handwritten notes, or any other form of information that copies, contains, or discloses Protected Material. All Protected Material in the possession of a Receiving Party and a Reviewing Representative shall be maintained in a secure place. Access to Protected Material shall be limited to the Receiving

Party and the Reviewing Representative, after each has executed the Nondisclosure Agreement and provided a copy of the Nondisclosure Agreement to the Disclosing Party, subject to the limited exception in Paragraph I.H.

B. Protected Material must be used and disclosed by the Receiving Party solely in accordance with the terms and conditions of this Protective Order. A Receiving Party and Reviewing Representative may analyze the Protected Material; make or respond to discovery; present evidence; prepare testimony, argument, briefs, or other filings; prepare for cross-examination; consider strategy; and evaluate settlement. A Reviewing Representative shall not release or disclose the content of Protected Material to any other person or use the information for any other purpose.

C. The Disclosing Party may request the Receiving Party withhold certain information from a Reviewing Representative and retains the right to object to any designated Reviewing Representative if the Disclosing Party has reason to believe that there is an unacceptable risk of misuse of confidential information. If a Disclosing Party objects to a Reviewing Representative, then the Disclosing Party shall submit the dispute to the presiding hearing officer simultaneously upon objection. If the Disclosing Party notifies a Receiving Party of an objection to a Reviewing Representative, then the Protected Material shall not be provided to that Reviewing Representative until the objection is resolved by agreement or by the presiding hearing officer.

D. If a Receiving Party seeks access to Critical Energy Infrastructure Information ("CEII") as defined in 16 U.S.C § 824o-1(a)(3) and FERC rules, specifically 18 CFR § 388.113(c), the Receiving Party and Reviewing Representative shall also sign the CEII Nondisclosure Certificate (Attachment 2 to this Protective Order) and provide a copy of the

executed CEII Nondisclosure Certificates to the Disclosing Party.

E. The obligations under this Protective Order do not expire by entry of a final order in this case and are enforceable by the MPSC or a court of competent jurisdiction. To the extent Protected Material is not returned to a Disclosing Party, it remains subject to this Protective Order. Members of the Commission, Commission staff assigned to assist the Commission with its deliberations, and the presiding hearing officer shall have access to all Protected Material that is submitted to the Commission under seal.

F. A Party retains the right to seek further restrictions on the dissemination of Protected Material to persons who have or may subsequently seek to intervene in this MPSC proceeding.

G. Nothing in this Protective Order precludes a Party from asserting a timely evidentiary objection to the proposed admission of Protected Material into the evidentiary record for this case.

III. Procedures

A. The Disclosing Party shall identify what portion(s) of any document designated confidential it considers confidential. This can be done through highlights or other clear identifier. The Disclosing Party must mark any information that it considers confidential as "CONFIDENTIAL: SUBJECT TO THE PROTECTIVE ORDER ISSUED IN CASE NO. U-21985." Software executable files containing Protected Material may not be capable of being marked with the foregoing required protective language. The inability to mark software executable files containing Protected Material with such protective language shall not diminish the requirements of this Protective Order. It shall be sufficient if the medium used to deliver software executable files containing Protected Material is marked with the required protective language. However, any output from the software executable files containing Protected Material that is generated only as a reproducible document, whether electronic or non-electronic, that is

capable of being marked with the required protective language, shall be marked by the party who generated the output with such protective language and subject to the requirements of this Protective Order. If the Receiving Party or a Reviewing Representative makes copies of any Protected Material, they shall conspicuously mark the copies as Protected Material. Notes of Protected Material shall also be conspicuously marked as Protected Material by the person making the notes.

B. If a Receiving Party wants to quote, refer to, or otherwise use Protected Material in pleadings, pre-filed testimony, exhibits, cross-examination, briefs, oral argument, comments, or in some other form in this proceeding (including administrative or judicial appeals), the Receiving Party shall do so consistent with procedures that will maintain the confidentiality of the Protected Material. For purposes of this Protective Order, the following procedures apply:

1. Written submissions using Protected Material shall be filed in a sealed record to be maintained by the MPSC's Docket Section, or by a court of competent jurisdiction, in envelopes clearly marked on the outside, "CONFIDENTIAL – SUBJECT TO THE PROTECTIVE ORDER ISSUED IN CASE NO. U-21985." Simultaneously, identical documents and materials, with the Protected Material redacted, shall be filed and disclosed the same way that evidence or briefs are usually filed;

2. Oral testimony, examination of witnesses, or argument about Protected Material shall be conducted on a separate record to be maintained by the MPSC's Docket Section or by a court of competent jurisdiction. These separate record proceedings shall be closed to all persons except those furnishing the Protected Material and persons otherwise subject to this Protective Order. The Receiving Party presenting the Protected Material during the course of the proceeding shall give the presiding officer or court sufficient notice to allow the presiding officer or court an opportunity to take measures to protect the confidentiality of the Protected Material; and

3. Copies of the documents filed with the MPSC which contain Protected Material, including the portions of the exhibits, transcripts, or briefs that refer

to Protected Material, shall be marked or identified as, "CONFIDENTIAL - SUBJECT TO PROTECTIVE ORDER IN CASE NO. U-21985" and shall be maintained in a separate portion of the record under seal, segregated in the files of the Commission, and withheld from inspection by any person not bound by the terms of this Order.

C. The Protected Material subject to this Order shall be shielded from disclosure to the extent permitted by law. If any person files a request under the Freedom of Information Act ("FOIA") with the MPSC or the Michigan Attorney General seeking access to documents subject to this Protective Order, the MPSC's Executive Secretary, Staff, or the Attorney General shall promptly notify the Disclosing Party, and the Disclosing Party may take whatever legal actions it deems appropriate to protect the Protected Material from disclosure. In light of Section 5 of the Freedom of Information Act, MCL 15.235, the notice must be given at least five (5) business days before the MPSC, Staff, and/or the Michigan Attorney General grant the request in full or in part.

IV. Termination of Protected Status

A. A Receiving Party reserves the right to challenge by motion whether a document or information is Protected Material and whether this information can be withheld under this Protective Order. The Receiving Party challenging the protected status of the document must explicitly state its reason for challenging the confidential designation. In response to a motion, the Commission or the presiding hearing officer in this case may revoke a document's protected status after notice and hearing. If the presiding hearing officer revokes a document's protected status, then the document loses its protected status after 14 days unless a Party files an application for leave to appeal the ruling and a request for a stay to the Commission pursuant to R 792.10433. If the application for leave is timely, the document's protected status will continue during the Commission appeal process. Any Party opposing the application for leave to appeal

and the stay shall file an answer with the Commission no more than 14 days after the filing and service of the appeal. Continued protected status post order, will be determined by the Commission in its order addressing the application for leave and the request for stay. Nothing in this paragraph shall prohibit the Disclosing Party from seeking a stay on appeal of the Commission's decision regarding the revocation of any document's protected status.

B. The Disclosing Party bears the burden of proving that the document should continue to be protected from disclosure.

V. Retention of Documents

Protected Material remains the property of the Disclosing Party and, except as required by applicable law and State retention schedules, only remains available to the Receiving Party until the time expires for petitions for rehearing of a final MPSC order, until the MPSC has ruled on all petitions for rehearing in this case (if any), or until judicial review is completed and the time to take further appeal has expired. If the Disclosing Party seeks to have the Receiving Party return all Protected Material in the Receiving Party's possession or in the possession of its Reviewing Representatives, or certify in writing that all Protected Material has been destroyed, it is the responsibility of the Disclosing Party to contact the Receiving Party and make its request no earlier than the expiration of time for filing petitions for rehearing of a final MPSC order, until the MPSC has ruled on all petitions for rehearing in this case (if any), or until judicial review is completed and the time to take further appeal has expired. Further, for a Receiving Party that is associated with the State, the request must be consistent with the expiration of the State retention requirement.

Notwithstanding the foregoing, counsel for the Receiving Party may maintain a single confidential file of Protected Material subject to all other provisions in this Order. Should

counsel seek to refer to the Protected Material in another Commission proceeding, the Disclosing Party must be the Applicant in said proceeding and counsel must ensure there is a protective order in said proceeding which protects the Protected Material from public disclosure.

VI. Limitations and Disclosures

This Protective Order does not apply to a particular document, or portion of a document, described in Paragraph II.A if a Receiving Party can demonstrate that it has been previously disclosed by the Disclosing Party on a non-confidential basis or meets the criteria set forth in Paragraphs I.B.1 through I.B.4. A Receiving Party intending to disclose information taken directly from materials identified as Protected Material must-before actually disclosing the information-do one of the following: (i) contact the Disclosing Party's counsel of record and obtain written permission to disclose the information, or (ii) challenge the confidential nature of the Protected Material and obtain a ruling under Paragraph IV that the information is not confidential and may be disclosed in or on the public record.

VII. Remedies

If a Receiving Party violates this Protective Order by improperly disclosing or using Protected Material, the Receiving Party shall take all necessary steps to remedy the improper disclosure or use. This includes promptly notifying all Parties and the presiding hearing officer in writing. The written notice must identify the person known or reasonably suspected to have obtained the Protected Material. A Party or person that violates this Protective Order remains subject to this paragraph regardless of whether the Disclosing Party could have discovered the violation earlier than it was discovered. This paragraph applies to both inadvertent and intentional violations. Nothing in this Protective Order limits the Disclosing Party's rights and remedies, at law or in equity, against a Party or person using Protected Material in a manner not authorized by this Protective Order, including the right to obtain injunctive relief in a court of competent jurisdiction to prevent violations of this Protective Order.

VIII. Modification

Formal Addendums to this agreement may be established by an ALJ upon motion by any party and after notice and hearing.

MICHIGAN ADMINISTRATIVE HEARING SYSTEM
For the Michigan Public Service Commission

_____

Administrative Law Judge

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

Attachment 1

NONDISCLOSURE CERTIFICATE

By signing this Nondisclosure Certificate, I acknowledge that access to Protected Material is provided to me under the terms and restrictions of the Protective Order issued in Case No. U-21985, that I have read the Protective Order, and that I agree to be bound by the terms of the Protective Order.

Reviewing Representative:

Date:_____ _____

Receiving Party:

_____

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

Attachment 2

NONDISCLOSURE CERTIFICATE

FOR CRITICAL ELECTRIC INFRASTRUCTURE INFORMATION

I hereby agree and certify my understanding that access to Critical Electric Infrastructure Information ("CEII") as defined at 16 USC Section 824o-1(a)(3) and 18 CFR Section 388.113(c) is provided to me pursuant to the terms and restriction of this CEII Nondisclosure Certificate and the Protective Order issued in Case No. U-21985, that I have been given a copy of and have read the Protective Order, and I agree to be bound by the terms of this CEII Nondisclosure Certificate and the Protective Order. I further agree that:

1. I will use CEII only for the purpose for which it was requested;

2. I will only discuss CEII with a Party and/or Reviewing Representative;

3. I will keep CEII in a secure place in a manner that prevents unauthorized access;

4. I will destroy CEII or return it to the disclosing party upon request;

5. I understand that CEII is not subject to release under the Freedom of Information Act;

6. I understand that I am obligated to protect CEII even after a designation as CEII has lapsed until a determination by the administrative law judge that the information should no longer be designated as CEII; and

7. I will report all unauthorized disclosures of CEII to the Disclosing Party.

Reviewing Representative:

Date:_____ _____

Title:_____

Receiving Party:_____

Printed Name:_____

ATTACHMENT C

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VIA E-FILING

October 31, 2025

Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Calkins Bridge Hydroelectric Project No. 785; Foote Project No. 2436; Alcona Project No. 2447; Mio Project No. 2448; Loud Project No. 2449; Cooke Project No. 2450; Rogers Project No. 2451; Hardy Project No. 2452; Five Channels Project No. 2453; Croton Project No. 2468; Webber Hydroelectric Project No. 2566; Tippy Project No. 2580; and Hodenpyl Project No. 2599
Joint Application for Approval of Transfer of Licenses and Request for Confidential Treatment of Certain Documents

Dear Secretary Reese:

Consumers Energy Company (Consumers Energy) and Confluence Hydro Calkins Bridge, LLC; Confluence Hydro Foote, LLC; Confluence Hydro Alcona, LLC; Confluence Hydro Mio, LLC; Confluence Hydro Loud, LLC; Confluence Hydro Cooke, LLC; Confluence Hydro Rogers, LLC; Confluence Hydro Hardy, LLC; Confluence Hydro Five Channels, LLC; Confluence Hydro Croton, LLC; Confluence Hydro Webber, LLC; Confluence Hydro Tippy, LLC; and Confluence Hydro Hodenpyl, LLC (collectively, Confluence Hydro Subsidiaries) (collectively, Applicants) are filing the attached Joint Application for Approval of Transfer of Licenses (Application), which seeks approval from the Federal Energy Regulatory Commission (FERC or Commission) to transfer 13 licenses from Consumers Energy to the Confluence Hydro Subsidiaries as follows:

Project	Transferee
Calkins Bridge Hydroelectric Project, FERC Project No. 785	Confluence Hydro Calkins Bridge, LLC
Foote Project, FERC Project No. 2436	Confluence Hydro Foote, LLC
Alcona Project, FERC Project No. 2447	Confluence Hydro Alcona, LLC
Mio Project, FERC Project No. 2448	Confluence Hydro Mio, LLC
Loud Project, FERC Project No. 2449	Confluence Hydro Loud, LLC
Cooke Project,	Confluence Hydro Cooke, LLC

Project	Transferee
FERC Project No. 2450	
Rogers Project, FERC Project No. 2451	Confluence Hydro Rogers, LLC
Hardy Project, FERC Project No. 2452	Confluence Hydro Hardy, LLC
Five Channels Project, FERC Project No. 2453	Confluence Hydro Five Channels, LLC
Croton Project, FERC Project No. 2468	Confluence Hydro Croton, LLC
Webber Hydroelectric Project, FERC Project No. 2566	Confluence Hydro Webber, LLC
Tippy Project, FERC Project No. 2580	Confluence Hydro Tippy, LLC
Hodenpyl Project, FERC Project No. 2599	Confluence Hydro Hodenpyl, LLC

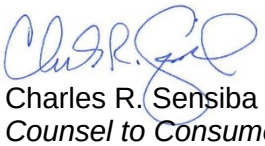
On September 3, 2025, Consumers Energy signed a Purchase and Sale Agreement with Confluence Hydro, LLC (Confluence Hydro), a subsidiary of Hull Street Energy, LLC, to sell Consumers Energy's fleet of 13 small hydroelectric projects along five Michigan rivers (Projects). Transferring these assets to the Confluence Hydro Subsidiaries is expected to reduce long-term costs for Consumers Energy's customers, while allowing Confluence Hydro, through its Confluence Hydro Subsidiaries, to safely deliver reliable, clean energy, and support economic and recreational opportunities that Michigan communities have enjoyed for more than a century.

As explained in more detail in the Application, each Confluence Hydro Subsidiary has the requisite technical, legal, financial qualifications to hold the license for its respective Project. To demonstrate the Confluence Hydro Subsidiaries' qualifications, the Application includes supporting attachments, including the Limited Liability Company Agreement for each of the Confluence Hydro Subsidiaries (Attachment D), a summary of the specific financial terms of a Renewable Energy Purchase Agreement (Attachment E), and the resume of Jillian Lawrence, PE, MS Eng. (Attachment G). These documents contain sensitive commercial and financial information that is privileged, confidential, and exempt from the mandatory public disclosure requirements of the Freedom of Information Act. Accordingly, Applicants are filing Attachments D and E under the CUI//PRIV designation and request that the Commission place them in its non-public file.

Importantly, concurrent with the filing of this Application, Consumers Energy is filing an Application for Non-Capacity Amendments of Licenses and Request for Non-Project Use of Project Lands (License Amendment Application) in the above referenced dockets. As Commission approval of both these applications are necessary prerequisites to closing the transaction, Applicants respectfully request concurrent and prompt consideration of these applications.

Applicants appreciate the Commission's consideration of this request. Should you have any questions, please contact the counsel identified in the attached Application.

Respectfully submitted,



Charles R. Sensiba
Counsel to Consumers Energy Company

Enclosure: Joint Application for Approval of Transfer of Licenses

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Project Nos. 785; 2436; 2447;**
	)	**2448; 2449; 2450; 2451; 2452;**
Confluence Hydro Calkins Bridge, LLC	**)**	**2453; 2468; 2566; 2580; 2599**
Confluence Hydro Foote, LLC	**)**	
Confluence Hydro Alcona, LLC	**)**	
Confluence Hydro Mio, LLC	**)**	
Confluence Hydro Loud, LLC	**)**	
Confluence Hydro Cooke, LLC	**)**	
Confluence Hydro Rogers, LLC	**)**	
Confluence Hydro Hardy, LLC	**)**	
Confluence Hydro Five Channels, LLC	**)**	
Confluence Hydro Croton, LLC	**)**	
Confluence Hydro Webber, LLC	**)**	
Confluence Hydro Tippy, LLC	**)**	
Confluence Hydro Hodenpyl, LLC	**)**	

JOINT APPLICATION FOR APPROVAL OF TRANSFER OF LICENSES

Pursuant to section 8 of the Federal Power Act (FPA)[2] and Part 9 of the regulations of the Federal Energy Regulatory Commission (FERC or Commission),[3] Consumers Energy Company (Consumers Energy or Transferor) and Confluence Hydro Calkins Bridge, LLC, Confluence Hydro Foote, LLC, Confluence Hydro Alcona, LLC, Confluence Hydro Mio, LLC, Confluence Hydro Loud, LLC, Confluence Hydro Cooke, LLC, Confluence Hydro Rogers, LLC, Confluence Hydro Hardy, LLC, Confluence Hydro Five Channels, LLC, Confluence Hydro Croton, LLC, Confluence Hydro Webber,

[2] 16 U.S.C. § 801.

[3] 18 C.F.R. § 9.1 *et seq.*

LLC, Confluence Hydro Tippy, LLC, and Confluence Hydro Hodenpyl, LLC (collectively, Confluence Hydro Subsidiaries or Transferees) hereby file this Joint Application for Approval of Transfer of Licenses (Application), which seeks Commission approval to transfer certain hydropower project licenses from Consumers Energy to subsidiaries of Confluence Hydro, LLC (Confluence Hydro), as follows:

Project	**Transferee**
Calkins Bridge Hydroelectric Project, FERC Project No. 785	Confluence Hydro Calkins Bridge, LLC
Foote Project, FERC Project No. 2436	Confluence Hydro Foote, LLC
Alcona Project, FERC Project No. 2447	Confluence Hydro Alcona, LLC
Mio Project, FERC Project No. 2448	Confluence Hydro Mio, LLC
Loud Project, FERC Project No. 2449	Confluence Hydro Loud, LLC
Cooke Project, FERC Project No. 2450	Confluence Hydro Cooke, LLC
Rogers Project, FERC Project No. 2451	Confluence Hydro Rogers, LLC
Hardy Project, FERC Project No. 2452	Confluence Hydro Hardy, LLC
Five Channels Project, FERC Project No. 2453	Confluence Hydro Five Channels, LLC
Croton Project, FERC Project No. 2468	Confluence Hydro Croton, LLC
Webber Hydroelectric Project, FERC Project No. 2566	Confluence Hydro Webber, LLC
Tippy Project, FERC Project No. 2580	Confluence Hydro Tippy, LLC
Hodenpyl Project, FERC Project No. 2599	Confluence Hydro Hodenpyl, LLC

On September 3, 2025, Consumers Energy signed a purchase and sale agreement with Confluence Hydro, a subsidiary of Hull Street Energy, LLC (Hull Street Energy), to sell Consumers Energy's fleet of 13 hydroelectric projects along five Michigan rivers (Projects). Transferring these assets to the Confluence Hydro Subsidiaries as provided in

the purchase and sale agreement and proposed in this Application is expected to reduce long-term costs for Consumers Energy's customers, while allowing Confluence Hydro, through its Confluence Hydro Subsidiaries, to safely deliver reliable, clean energy, and support economic and recreational opportunities that Michigan communities have enjoyed for more than a century.

As demonstrated below, each Confluence Hydro Subsidiary is well qualified to hold the license for its respective Project. The Confluence Hydro Subsidiaries: (1) are legally authorized to engage in the business of hydropower generation in the State of Michigan; (2) have the requisite technical qualifications because the companies are part of a corporate family with considerable experience in the development, operation, and maintenance of FERC-licensed hydropower projects and will extend employment to the Consumers Energy hydro operations employees currently dedicated to the Projects to ensure a seamless transition in operation of the Projects; (3) have the financial resources to operate and maintain the Projects and comply with the Projects' licenses; and (4) are strongly qualified, experienced, and committed to ensuring dam safety at the Projects.

For these reasons, the license transfers sought in this Application are in the public interest and should be approved.

I. BACKGROUND

A. Description of Project Licenses Proposed for Transfer

1. Calkins Bridge Hydroelectric Project (FERC No. 785)

The Calkins Bridge Hydroelectric Project is located on the Kalamazoo River in Allegan County, Michigan, and has an authorized installed capacity of 2.55 megawatts (MW). The project generally consists of a gravity dam, powerhouse, spillway a reservoir known as Lake Allegan, transmission facilities, and appurtenant facilities. The

Commission issued a new license for the project on January 15, 2010, for a period of 30 years.[4]

2. Foote Project (FERC No. 2436)

The Foote Project is located on the Au Sable River in Iosco County, Michigan, and has an authorized installed capacity of 7.229 MW. The project occupies 484 acres of federal lands within the Huron National Forest, which is administered by the U.S. Forest Service. The project generally consists of a dam with two earth fill embankment sections, spillway, powerhouse, impoundment, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[5]

3. Alcona Project (FERC No. 2447)

The Alcona Project is located on the Au Sable River in Alcona County, Michigan, and has an authorized installed capacity of 8 MW. The project occupies 364 acres of federal lands within the Huron National Forest. The project generally consists of a dam with two earth fill embankment sections, spillway, powerhouse, impoundment, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[6]

4. Mio Project (FERC No. 2448)

The Mio Project is located on the Au Sable River in Oscoda County, Michigan, and has an authorized installed capacity of 3.885 MW. The project occupies 320 acres of federal lands within the Huron National Forest. The project generally consists of a dam

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4 *Consumers Energy Co.*, 130 FERC ¶ 62,052 (2010).

5 *Consumers Power Co.*, 68 FERC ¶ 61,082 (1994).

6 *Consumers Power Co.*, 68 FERC ¶ 61,081 (1994).

with two earth fill embankment sections, spillways, impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[7]

5. Loud Project (FERC No. 2449)

The Loud Project is located on the Au Sable River in Iosco County, Michigan, and has an authorized installed capacity of 4 MW. A portion of the project occupies federal lands within the Huron National Forest. The project generally consists of a dam with two earth embankments, powerhouse, spillway, impoundment, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[8]

6. Cooke Project (FERC No. 2450)

The Cooke Project is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan, and has an authorized installed capacity of 6.609 MW. The project generally consists of two earth embankment dam sections, spillway, impoundment, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[9]

7. Rogers Project (FERC No. 2451)

The Rogers Project is located in Mecosta County, Michigan, on the Muskegon River and has an authorized installed capacity of 5.418 MW. The project generally consists of three earth embankment dam sections, a spillway, an impoundment, a

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7 *Consumers Power Co.*, 68 FERC ¶ 61,072 (1994).

8 *Consumers Power Co.*, 68 FERC ¶ 61,075 (1994).

9 *Consumers Power Co.*, 68 FERC ¶ 61,071 (1994).

powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[10]

8. Hardy Project (FERC No. 2452)

The Hardy Project is located in Newaygo and Mecosta Counties, Michigan, on the Muskegon River and has an authorized installed capacity of 29.6 MW. The project generally consists of an earth embankment dam, spillway, impoundment, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[11]

9. Five Channels Project (FERC No. 2453)

The Five Channels Project is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan, and has an authorized installed capacity of 6 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[12]

10. Croton Project (FERC No. 2468)

The Croton Project is located in Newaygo County, Michigan, on the Muskegon River and has an authorized installed capacity of 7.473 MW. The project generally consists of two earth embankments, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license

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[10] *Consumers Power Co.*, 68 FERC ¶ 61,074 (1994).

[11] *Consumers Power Co.*, 68 FERC ¶ 61,076 (1994).

[12] *Consumers Power Co.*, 68 FERC ¶ 61,073 (1994).

for the project on July 15, 1994, for a period of 40 years.[13]

11. Webber Hydroelectric Project (FERC No. 2566)

The Webber Hydroelectric Project is located on the Grand River near the City of Portland, in Ionia County, Michigan, and has an authorized installed capacity of 3.25 MW. The project generally consists of a dam, reservoir, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on June 20, 2001, for a period of 40 years.[14]

12. Tippy Project (FERC No. 2580)

The Tippy Project is located on the Manistee River, within the Manistee National Forest in Manistee County, Michigan, and has an authorized installed capacity of 14.255 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.[15]

13. Hodenpyl Project (FERC No. 2599)

The Hodenpyl Project is located on the Manistee River, within the Manistee National Forest in Manistee and Wexford Counties, Michigan, and has an authorized installed capacity of 13.884 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project

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13 *Consumers Power Co.*, 68 FERC ¶ 61,079 (1994).

14 *Consumers Energy Co.*, 95 FERC ¶ 62,246 (2001).

15 *Consumers Power Co.*, 68 FERC ¶ 61,080 (1994).

on July 15, 1994, for a period of 40 years.[16]

B. Description of the Confluence Hydro Subsidiaries

Hull Street Energy is a private equity firm headquartered in Bethesda, Maryland, that is primarily involved in the development and acquisition of, and investment in, energy infrastructure assets, and related ownership, operation, and management of these assets, including electric generation. Hull Street Energy formed Confluence Hydro to facilitate the acquisition of the Projects from Consumers Energy. Upon consummation of the transaction set forth in the purchase and sale agreement, Confluence Hydro will contribute the Projects to the Confluence Hydro Subsidiaries.

B. Description of the Confluence Hydro Subsidiaries

Hull Street Energy is a private equity firm headquartered in Bethesda, Maryland, that is primarily involved in the development and acquisition of, and investment in, energy infrastructure assets, and related ownership, operation, and management of these assets, including electric generation. Hull Street Energy formed Confluence Hydro to facilitate the acquisition of the Projects from Consumers Energy. Upon consummation of the transaction set forth in the purchase and sale agreement, Confluence Hydro will contribute the Projects to the Confluence Hydro Subsidiaries.

Each of the Confluence Hydro Subsidiaries is a special purpose entity established solely for the purpose of owning and operating its respective Project. Specifically, Confluence Hydro Alcona, LLC was formed to own and operate the Alcona Project; Confluence Hydro Calkins Bridge, LLC was formed to own and operate the Calkins Bridge Hydroelectric Project; Confluence Hydro Cooke, LLC was formed to own and

[16] *Consumers Power Co.*, 68 FERC ¶ 61,083 (1994).

operate the Cooke Project; Confluence Hydro Croton, LLC was formed to own and operate the Croton Project; Confluence Five Channels Hydro, LLC was formed to own and operate the Five Channels Project; Confluence Hydro Foote, LLC was formed to own and operate the Foote Project; Confluence Hydro Hardy, LLC was formed to own and operate the Hardy Project; Confluence Hydro Hodenpyl, LLC was formed to own and operate the Hodenpyl Project; Confluence Hydro Loud, LLC was formed to own and operate the Loud Project; Confluence Hydro Mio, LLC was formed to own and operate the Mio Project; Confluence Hydro Rogers, LLC was formed to own and operate the Rogers Project; Confluence Hydro Tippy, LLC was formed to own and operate the Tippy Project; and Confluence Hydro Webber, LLC was formed to own and operate the Webber Hydroelectric Project.

II. REQUEST FOR TRANSFER OF LICENSES

Consumers Energy and the Confluence Hydro Subsidiaries (collectively, Applicants) jointly and severally apply, pursuant to sections 4.32, 9.1 to 9.3, and 131.20 of the Commission's regulations,[17] for written approval by the Commission to transfer the above-captioned licenses. In accordance with the form set forth in section 131.20 of the Commission's regulations,[18] and in support of this Application, Applicants state, verify, and subscribe as follows:[19]

1. Consumers Energy (Transferor), licensee of the:

   Calkins Bridge Hydroelectric Project (FERC No. 785)
   Foote Project (FERC No. 2436)
   Alcona Project (FERC No. 2447)
   Mio Project (FERC No. 2448)

[17] 18 C.F.R. §§ 4.32, 9.1–9.3, 131.20.

[18] *Id.* § 131.20.

[19] Attachment A contains the Subscription and Verification for Transferor and Transferees.

Loud Project (FERC No. 2449)
Cooke Project (FERC No. 2450)
Rogers Project (FERC No. 2451)
Hardy Project (FERC No. 2452)
Five Channels Project (FERC No. 2453)
Croton Project (FERC No. 2468)
Webber Hydroelectric Project (FERC No. 2566)
Tippy Project (FERC No. 2580), and
Hodenpyl Project (FERC No. 2599), and

2. Confluence Hydro Calkins Bridge, LLC, Transferee of the Calkins Bridge Hydroelectric Project (FERC No. 785); Confluence Hydro Foote, LLC, Transferee of the Foote Project (FERC No. 2436); Confluence Hydro Alcona, LLC, Transferee of the Alcona Project (FERC No. 2447); Confluence Hydro Mio, LLC, Transferee for the Mio Project (FERC No. 2448); Confluence Hydro Loud, LLC, Transferee of the Loud Project (FERC No. 2449); Confluence Hydro Cooke, LLC, Transferee of the Cooke Project (FERC No. 2450); Confluence Hydro Rogers, LLC, Transferee of the Rogers Project (FERC No. 2451); Confluence Hydro Hardy, LLC, Transferee of the Hardy Project (FERC No. 2452); Confluence Hydro Five Channels, LLC, Transferee of the Five Channels Project (FERC No. 2453); Confluence Hydro Croton, LLC, Transferee of the Croton Project (FERC No. 2468); Confluence Hydro Webber, LLC, Transferee of the Webber Hydroelectric Project (FERC No. 2566); Confluence Hydro Tippy, LLC, Transferee of the Tippy Project (FERC No. 2580); and Confluence Hydro Hodenpyl, LLC, Transferee of the Hodenpyl Project (FERC No. 2599),

3. Hereby jointly and severally apply for the written approval by the Commission of the transfer of the aforesaid licenses from the Transferor to the respective Transferee and request that the instruments of such approval by the Commission be made effective as of the date of conveyance of each project's properties.

4. In support thereof, Transferor and each Transferee show the Commission as follows:

Confluence Hydro Calkins Bridge, LLC, Transferee for the Calkins Bridge Hydroelectric Project (FERC No. 785), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Calkins Bridge, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA,[20] certified copies of its State of Delaware Limited Liability

[20] 16 U.S.C. § 802(a)(2).

Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Foote, LLC, Transferee for the Foote Project (FERC No. 2436), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Foote, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Alcona, LLC, Transferee for the Alcona Project (FERC No. 2447), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Alcona, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Mio, LLC, Transferee for the Mio Project (FERC No. 2448), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Mio, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Loud, LLC, Transferee for the Loud Project (FERC No. 2449), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Loud, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Cooke, LLC, Transferee for the Cooke Project (FERC No. 2450), is a limited liability company organized under the laws of the

Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Cooke, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Rogers, LLC, Transferee for the Rogers Project (FERC No. 2451), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Rogers, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Hardy, LLC, Transferee for the Hardy Project (FERC No. 2452), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Hardy, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Five Channels, LLC, Transferee for the Five Channels Project (FERC No. 2453), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Five Channels, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Croton, LLC, Transferee for the Croton Project (FERC No. 2468), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Croton, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all

amendments of each to date.

Confluence Hydro Webber, LLC, Transferee for the Webber Hydroelectric Project (FERC No. 2566), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachment L, Confluence Hydro Webber, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Tippy, LLC, Transferee for the Tippy Project (FERC No. 2580), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Tippy, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

Confluence Hydro Hodenpyl, LLC, Transferee for the Hodenpyl Project (FERC No. 2599), is a limited liability company organized under the laws of the Delaware and is authorized to conduct business in Michigan. As presented in Attachments B-D, Confluence Hydro Hodenpyl, LLC submits as evidence of its compliance with all applicable State laws as required by section 9(a)(2) of the FPA, State of Delaware Limited Liability Company Certificate of Formation, Certificate of Authority to Conduct Business in Michigan, and Limited Liability Company Agreement, with all amendments of each to date.

5. Each respective Transferee will submit certified copies of all instruments of conveyance whereby title to its respective project properties is conveyed to it, upon the completion of such conveyance, if and when the Commission shall have given its approval to the proposed transfers.

6. If and when the Commission shall have given its approval to the proposed transfers, and upon completion of conveyance of the respective project property to the respective Transferee, the Transferor will deliver to the respective Transferee and the respective Transferee will accept and permanently retain all license instruments and all maps, plans, specifications, contracts, reports of engineers, accounts, books, records, and all other papers and documents relating to the respective project and to all additions thereto and betterments thereof.

Pursuant to 18 C.F.R. § 9.3(b), the Transferees will have sixty (60) days from the order approving license transfers to submit their acknowledgements of acceptance of the licenses and the appropriate conveyance documents to the Commission. In light of the number of regulatory authorizations required to effectuate the transactions, including approval by the Michigan Public Service Commission, Applicants may need additional time beyond the sixty (60) days provided in the Commission's order to close the transactions, transfer title of the Project properties, transfer all Project files, record all relevant conveyance documents and submit them to the Commission. Accordingly, Applicants request Commission approval for the Transferees to have 120 days, rather than sixty (60) days, to submit the required license conveyance documents.

7. Transferor certifies that it has fully complied with the terms and conditions of the licenses, and that it has fully satisfied and discharged all of its liabilities and obligations thereunder to the date hereof, and obliges itself to pay all annual charges accrued under the licenses to the date of transfer.

8. Contingent upon the final written approval by the Commission of the transfer of the licenses, each Transferee accepts, with respect to its respective license, all the terms and conditions of said license and agrees to be bound thereby to the same extent as though it were the original licensee thereunder.

9. The name, title, and post office address of the persons to whom correspondence in regard to this Application shall be addressed are as follows:

For Transferor:

Rachael H. Moore
Senior Attorney
Consumers Energy Company
One Energy Plaza
Jackson, MI 49201
(517) 788-1147
rachael.moore@cmsenergy.com

Matthew D. Hall
Attorney
Consumers Energy Company
One Energy Plaza
Jackson, MI 49201
(517) 788-2231

Charles R. Sensiba
Sahara D. Shrestha
Troutman Pepper Locke LLP
401 9th St. NW, Suite 1000
Washington, D.C. 20004
(202) 274-2850
charles.sensiba@troutman.com
sahara.shrestha@troutman.com

Dustin T. Till
Troutman Pepper Locke LLP
100 SW Main Street, Suite 1000
Portland, OR 97214
(503) 290-2315

matthew.hall@cmsenergy.com dustin.till@troutman.com

Adam J. Monroe
Executive Director Hydro Operations
Consumers Energy Company
330 Chestnut St.
Cadillac, MI 49601
(231) 429-5033
adam.monroe@cmsenergy.com

For Transferees:

Randall Osteen
General Counsel
Hull Street Energy, LLC
4747 Bethesda Avenue, Suite 1220
Bethesda, MD 20814
(410) 303-4174
rosteen@hullstreetenergy.com

Julia Wood
Lynn A. Kirshbaum
Rock Creek Energy Group
1 Thomas Circle NW, Suite 700
Washington, DC 20005
(202) 247-7478
jwood@rockcreekenergygroup.com
lkirshbaum@rockcreekenergygroup.com

III. PUBLIC INTEREST CONSIDERATIONS

Section 8 of the FPA provides that "[n]o voluntary transfer of any license, or of the rights thereunder granted, shall be made without the written approval of the commission . . . ."[21] Although section 8 "does not articulate a standard for approving a transfer application,"[22] the Commission has held that a license transfer application "may be approved on a showing that the transferee is qualified to hold the license and operate the project, and that a transfer is in the public interest."[23] The Commission's regulations require transfer applications to "set forth in appropriate detail the qualifications of the

[21] 16 U.S.C. § 801.

[22] *PacifiCorp*, 172 FERC ¶ 61,062, at P 66 (2020) (citing *Potosi Generating Station, Inc.*, 100 FERC ¶ 61,115 (2002)).

[23] *Id.* (citing 18 C.F.R. § 9.3; *Kootenai Tribes Energy Keepers, Inc.*, 153 FERC ¶ 61,217 (2015); *Gallia Hydro Partners*, 110 FERC ¶ 61,237 (2005); *Wisconsin v. FERC*, 104 F.3d 462 (D.C. Cir. 1997)).

transferee to hold such license and to operate the property under the license,"[24] and establish that Commission approval of license transfer "is contingent upon . . . a showing that such transfer is in the public interest."[25]

In determining the public interest and a transferee's qualifications, the Commission evaluates "the transferee's legal, technical, and financial qualifications to hold the license and operate and maintain the project."[26] The Confluence Hydro Subsidiaries are legally, technically, and financially qualified to hold the licenses for the Projects, as detailed below.

A. Legal Qualifications

The Confluence Hydro Subsidiaries are legally qualified to hold the Project licenses to operate their respective Projects. Each Confluence Hydro Subsidiary was formed as a Delaware limited liability company, and each is authorized to engage in the business of developing, transmitting, and distributing power in the State of Michigan, and in any other business necessary to effect the purposes of the respective license. Certified copies of the State of Delaware Limited Liability Company Certificates of Formation are attached to this Application as Attachment B, Certificates of Authority to Conduct Business in Michigan are attached to this Application as Attachment C, and Limited Liability Company Agreement for each of the Confluence Hydro Subsidiaries are attached to this Application as confidential Attachment D.

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[24] 18 C.F.R. § 9.2.

[25] *Id.* § 9.3(a).

[26] *Pac. Gas & Elec. Co.*, 177 FERC ¶ 61,111, at P 17 (2021); *see also PacifiCorp*, 162 FERC ¶ 61,236, at P 77 (2018) ("[W]e will defer our determinations on the [transferee's] legal and technical capacity to accept transfer of the license . . . to our review of the transfer application.").

B. Technical Qualifications

Confluence Hydro was formed by Hull Street Energy to purchase the Projects on behalf of the Confluence Hydro Subsidiaries, an experienced owner and operator of FERC-jurisdictional hydropower projects with significant technical expertise. Hull Street Energy previously acquired, owned, and operated a fleet of 45 hydroelectric projects through its Central Rivers Power portfolio, whose subsidiaries were licensees in good standing with the Commission. The Confluence Hydro Subsidiaries therefore are part of a corporate family with deep experience owning, operating, and maintaining hydropower projects, and complying with FERC license requirements.

In addition to the hydropower operational and management expertise that the Confluence Hydro team will bring to the Projects, Confluence Hydro will extend employment to approximately 60 Consumers Energy hydro operations employees, so the same persons currently dedicated to operation of the Projects, who are intimately familiar with the Projects, and who engage regularly with Commission staff on license implementation and compliance matters, will have the opportunity to operate them alongside the existing Confluence Hydro team. This approach will ensure a seamless transition in operation of the Projects once the sale closes and preserve in the Confluence Hydro team longstanding technical expertise associated with these Projects.

C. Financial Qualifications

The Confluence Hydro Subsidiaries are financially qualified to hold the licenses and operate the Projects. In prior transfer proceedings, the Commission has held that power purchase agreements are sufficient to demonstrate financial qualifications,[27] and as

[27] *E.g.*, *FFP Project 92, LLC*, 192 FERC ¶ 62,137 (2025); *Pelzer Hydro Co.*, 188 FERC ¶ 62,070 (2024); *Fraser Papers Inc.*, 89 FERC ¶ 61,286 (1999), *reh'g denied*, 91 FERC ¶ 61,032 (2000).

part of Confluence Hydro's acquisition of the Projects, Confluence Hydro and Consumers entered into a 30-year Renewable Energy Purchase Agreement (REPA). Upon consummation of the transfer of the Projects, on behalf of the Confluence Hydro Subsidiaries, Confluence Hydro will sell all of the energy, capacity, and renewable energy credits from the Projects to Consumers pursuant to the terms of the REPA.

The Confluence Hydro team conducted extensive diligence of the Projects' historic operations and future generation capability in developing its pricing model for the REPA. Confluence Hydro specifically structured the REPA to account for planned and unplanned operations, maintenance, and capital expenses—including for ongoing dam safety work at the Hardy, Rogers, Alcona, and Hodenpyl Projects. The Hull Street Energy team's extensive experience as an owner and operator of other hydropower facilities—which included projects that required significant monetary investment to maintain safe and reliable operation when Hull Street Energy indirectly acquired them[28]—informed its conservative approach to modeling scenarios of operations, maintenance, and capital expenditures including unplanned extraordinary items.

Confluence Hydro also structured the REPA to reduce default risk and provide certainty of revenues to the Projects. For example, prolonged outages do not trigger default or termination of the REPA; business interruption coverage will maintain REPA payments if a plant is out of service for an extended period. Moreover, Project improvements will be insured at replacement cost to cover extraordinary repairs that may be necessary in the event of unplanned outages.

[28] For example, the Dexter (FERC Project No. 2695) and Putts Bridge (FERC Project No. 10677) projects, part of Hull Street Energy's Central Rivers hydropower portfolio, each required significant concrete spillway repair work.

The REPA covers generation across all 13 Projects, providing diversification across the Projects' five river systems, dam structures, and individual generating units. This insulates the individual Projects from cash flow shortages that could compromise their expense coverage. A summary of the specific financial terms of the REPA is provided in confidential Attachment E, which demonstrates the Confluence Hydro Subsidiaries' financial capability to hold the Project licenses.

Finally, the Confluence Hydro Subsidiaries expressly consent to the amendment of the respective Project licenses, upon the Commission's approval of the transfers, to include a reservation of authority regarding financial assurance.[29]

D. Dam Safety Expertise and Commitment

The Confluence Hydro team has extensive experience with dam safety, public safety, emergency action procedures, and security. Through their work on the Central Rivers Power portfolio of hydropower projects, the Confluence Hydro team understands the responsibilities and liabilities associated with dam ownership, and the necessity of maintaining dam safety through proper design, construction, operation, maintenance, and compliance with Commission requirements. This is reflected in the robust Owners Dam Safety Program (ODSP) for the Central Rivers Power projects that Hull Street Energy developed during its ownership tenure of that portfolio. Consistent with that prior approach, Confluence Hydro has thoroughly reviewed the existing ODSP for the Projects and will update the ODSP to reflect the change in upstream ownership. This will include a refinement of the roles, responsibilities, and commitment to dam safety of the new owner, and communicates and reinforces the same core principles of the existing ODSP

[29] *See e.g.*, *FFP Project 92, LLC*, 192 FERC ¶ 62,137, at P 7 (2025); *Rivers Elec. Co.*, 178 FERC ¶ 61,027, at P 9 (2022); *AEP Generation Resources Inc.*, 177 FERC ¶ 61,185, at P 8 (2021).

that dam safety is a top priority and focus of the team.

Within the Confluence Hydro organizational structure, depicted in Attachment F, dam safety will be prioritized at every level. For example, the Chief Executive Officer will lead the organization with a safety mindset and set the philosophy and policy that demonstrates that production or other business objectives shall not compromise dam safety. The asset managers will manage Confluence Hydro to ensure that the ODSP reflects the safety culture and policies and that resources are available to effectuate the ODSP. The Executive Hydro Director, in Hydro Generation, will be responsible for ensuring that the Chief Dam Safety Coordinator (CDSC), in Dam Safety, is implementing, tracking, and updating the ODSP and that all Confluence Hydro employees are trained on the ODSP. The CDSC will be responsible for ensuring that the ODSP is fully implemented and that Confluence Hydro's high standards are maintained for dam safety. The dam safety engineers will manage the execution of the ODSP and will serve as the points of contact for non-emergency dam safety communications from the Confluence Hydro Subsidiaries to FERC.

While the former Central Rivers Power former Chief Dam Safety Engineer will provide leadership to Confluence Hydro as part of her role as Vice President, Asset Management Hydro at Hull Street Energy,[30] Confluence Hydro will extend employment to the same dedicated Consumers Energy staff that currently oversees dam safety at the Projects, including the Executive Hydro Director, Chief Dam Safety Engineer, and dam safety engineers. These members of the Consumers Energy dam safety team will have the

[30] The resume of Jillian Lawrence, PE, MS Eng., included as confidential Attachment G, reflects her extensive hydro management and dam safety experience.

option to remain in their respective roles at Confluence Hydro with similar authority, ensuring a seamless transition of dam safety matters at the Projects.

With respect to consultants, Confluence Hydro will communicate the requirements of the ODSP to all contractors and consultants by means of a formal review of the annual Dam Safety Philosophy Statement prior to the start of all site work. In addition, Confluence Hydro will require its engineering consultants and construction contractors to review its Quality Control Inspection Program prior to the start of work.

IV. REQUEST FOR PRIVILEGED TREATMENT

Attachment D contains the Limited Liability Company Agreement for each of the Confluence Hydro Subsidiaries. Attachment E contains a summary of the specific financial terms of the REPA. Attachment G contains the resume of Jillian Lawrence, PE, MS Eng. These documents contain sensitive commercial and financial information that is privileged or confidential and not publicly available. Such information is non-public and is exempt from the mandatory public disclosure requirements of the Freedom of Information Act (FOIA).[31] Accordingly, in accordance with section 388.112(b) of the Commission's regulations,[32] Applicants seek privileged treatment of Attachments D, E, and G and ask that the Commission place them in its non-public files.

V. CONCLUSION

WHEREFORE, for the reasons described above, Applicants submit that this Application is in the public interest and request the Commission to approve it, including:

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[31] 5 U.S.C. § 552*; see also Food Mktg. Inst. v. Argus Leader Media*, 139 S.Ct. 2356, 2364-66 (2019) ("[W]here commercial or financial information is both customarily and actually treated as private by its owner and provided to the government under an assurance of privacy, the information is 'confidential'" and thus exempt from disclosure under FOIA).

[32] 18 C.F.R. § 388.112(b).

(1) Applicants' request that the Confluence Hydro Subsidiaries be afforded 120 days, rather than sixty (60) days,[33] to submit the acceptance sheets and conveyance documents; and (2) Applicants' request for confidential treatment of Attachments D and E.

Respectfully submitted,

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Dustin T. Till
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Counsel for Transferor

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(202) 247-7478
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lkirshbaum@rockcreekenergygroup.com

Counsel for Transferees

DATED: October 31, 2025

[33] *See* 18 C.F.R. § 9.3(b).

Table of Attachments

Attachment Name	Description
A	Subscriptions and Verifications for Transferor and Transferees
B	State of Delaware Limited Liability Company Certificates of Formation for Confluence Hydro Subsidiaries
C	Certificates of Authority to Conduct Business in the State of Michigan of Confluence Hydro Subsidiaries
D	Limited Liability Company Agreements of Confluence Hydro Subsidiaries – CUI//PRIV
E	Financial Demonstration – CUI//PRIV
F	Confluence Hydro, LLC Organizational Structure
G	Resume of Jillian Lawrence, PE, MS Eng. – CUI//PRIV

Attachment A

Subscriptions and Verifications for Transferor and Transferees

SUBSCRIPTION

This Joint Application for Approval of Transfer of Licenses (Application) is executed in the:

State of Michigan
County of WEXFORD

By: Adam J. Monroe
Executive Director Hydro Operations
Consumers Energy Company
330 Chestnut St.
Cadillac, MI 49601
(231) 429-5033
adam.monroe@cmsenergy.com

Adam J. Monroe, being duly sworn, deposes and says that the contents of this Application with respect to Consumers Energy Company are true to the best of his knowledge or belief. The undersigned applicant has signed this application this 30th day of October, 2025.

CONSUMERS ENERGY COMPANY

By: _____
Adam J. Monroe
Executive Director Hydro Operations

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the State of Michigan, this 30th day of October, 2025.

_____
(Notary Public)

My commission expires 12/11/2031.
/SEAL/

HOLLIE L OLSON
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF WEXFORD
My Commission Expires December 11, 2031
Acting in the County of WEXFORD

Subscription and Verification

This Joint Application for Approval of Transfer of Licenses (Application) is executed in the:

STATE OF: Maryland
COUNTY OF: Montgomery

By: Randall Osteen
General Counsel
Hull Street Energy, LLC
4747 Bethesda Avenue, Suite 1220
Bethesda, MD 20814
Tel: (410) 303-4174
rosteen@hullstreetenergy.com

Randall Osteen, being duly sworn, deposes and says that the contents of this Application with respect to Confluence Hydro and the Confluence Hydro Subsidiaries are true to the best of his knowledge or belief. The undersigned applicant has signed this application this 28 th day of October, 2025.

By: _____
Randall Osteen
General Counsel, Hull Street Energy, LLC

Subscribed and sworn to before me, a Notary Public of the State of Maryland this 28th th day of October, 2025.

[Notary Seal]

WANJIKU KEBUCHI
NOTARY PUBLIC
MONTGOMERY COUNTY
MARYLAND
MY COMMISSION EXPIRES December 12, 2026

Wanjiku Kebuchi

Notary Public No. n/a

My Commission expires: 12/12/2026

State of: MARYLAND
County of: MONTGOMERY
The foregoing instrument was acknowledged before me 28th day of October, 2025
WANJIKU KEBUCHI
Your Name Here, Notary Public
My Commission Expires 12/12/2026

Attachment B

State of Delaware Limited Liability Company Certificates of Formation for Confluence Hydro Subsidiaries

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO ALCONA, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:07 O`CLOCK P.M.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335388 8100
SR# 20253991419

Authentication: 204908350
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Alcona, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:07 PM 09/16/2025
FILED 06:07 PM 09/16/2025
SR 20253991419 - File Number 10335388

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO CALKINS BRIDGE, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:09 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336420 8100
SR# 20253991434

Authentication: 204929925
Date: 10-02-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Calkins Bridge, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:09 PM 09/16/2025
FILED 06:09 PM 09/16/2025
SR 20253991434 - File Number 10336420

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO COOKE, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:11 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335428 8100
SR# 20253991453

Authentication: 204908456
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Cooke, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:11 PM 09/16/2025
FILED 06:11 PM 09/16/2025
SR 20253991453 - File Number 10335428

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO CROTON, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO CROTON, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336437 8300

SR# 20254383938

Authentication: 205148407

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Croton, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO FIVE CHANNELS, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:16 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335424 8100
SR# 20253991502

Authentication: 204908478
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Five Channels, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:16 PM 09/16/2025
FILED 06:16 PM 09/16/2025
SR 20253991502 - File Number 10335424

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO FOOTE, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:17 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335420 8100
SR# 20253991518

Authentication: 204908519
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Foote, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:17 PM 09/16/2025
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SR 20253991518 - File Number 10335420

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO HARDY, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:18 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335414 8100
SR# 20253991528

Authentication: 204908544
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Hardy, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
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Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO HODENPYL, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO HODENPYL, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

Authentication: 205148445

Date: 10-27-25

10336441 8300

SR# 20254383988

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Hodenpyl, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
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Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO LOUD, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:21 O`CLOCK P.M.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336450 8100
SR# 20253991555

Authentication: 204908571
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Loud, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:21 PM 09/16/2025
FILED 06:21 PM 09/16/2025
SR 20253991555 - File Number 10336450

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO MIO, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:22 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336451 8100
SR# 20253991568

Authentication: 204908586
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Mlo, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:22 PM 09/16/2025
FILED 06:22 PM 09/16/2025
SR 20253991568 - File Number 10336451

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO ROGERS, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:23 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336457 8100
SR# 20253991576

Authentication: 204908598
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Rogers, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:23 PM 09/16/2025
FILED 06:23 PM 09/16/2025
SR 20253991576 - File Number 10336457

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO TIPPY, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:24 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336459 8100
SR# 20253991588

Authentication: 204908605
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Tippy, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:24 PM 09/16/2025
FILED 06:24 PM 09/16/2025
SR 20253991588 - File Number 10336459

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "CONFLUENCE HYDRO WEBBER, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025, AT 6:26 O`CLOCK P.M.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336461 8100
SR# 20253991605

Authentication: 204908621
Date: 09-30-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

STATE OF DELAWARE
CERTIFICATE OF FORMATION
OF LIMITED LIABILITY COMPANY

The undersigned authorized person, desiring to form a limited liability company pursuant to the Limited Liability Company Act of the State of Delaware, hereby certifies as follows:

1. The name of the limited liability company is Confluence Hydro Webber, LLC.

2. The Registered Office of the limited liability company in the State of Delaware is located at 850 New Burton Road, Suite 201 (street), in the City of Dover, Zip Code 19904. The name of the Registered Agent at such address upon whom process against this limited liability company may be served is Cogency Global Inc.

By: _____
Authorized Person

Name: Randall Osteen
Print or Type

State of Delaware
Secretary of State
Division of Corporations
Delivered 06:26 PM 09/16/2025
FILED 06:26 PM 09/16/2025
SR 20253991605 - File Number 10336461

Attachment C

Certificates of Authority to Conduct Business in the State of Michigan of Confluence Hydro Subsidiaries

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO ALCONA, LLC
Foreign True Name:
Identity ID#: 900113704
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name

Address

City | State | ZIP Code

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Alcona, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO ALCONA, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO ALCONA, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335388 8300

SR# 20254383904

Authentication: 205148388

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO CALKINS BRIDGE, LLC
Foreign True Name:
Identity ID#: 900113639
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name	
Address	
City / State / ZIP Code	

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Calkins Bridge, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 6c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO CALKINS BRIDGE, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO CALKINS BRIDGE, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336420 8300

SR# 20254383921

Authentication: 205148392

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO COOKE, LLC
Foreign True Name:
Identity ID#: 900113611
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name

Address

City | State | ZIP Code

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Cooke, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October, 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO COOKE, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO COOKE, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335428 8300

SR# 20254383932

Authentication: 205148402

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO CROTON, LLC
Foreign True Name:
Identity ID#: 900113683
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
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Name	
Address	
City / State / ZIP Code	

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Croton, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave. Suite 1220, Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen	General Counsel and Secretary
(Type or Print Name)	(Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO CROTON, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO CROTON, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336437 8300

SR# 20254383938

Authentication: 205148407

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO FIVE CHANNELS, LLC
Foreign True Name:
Identity ID#: 900113632
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS.
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	(FOR BUREAU USE ONLY)
	AC1
	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name	
Address	
City / State / ZIP Code	

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Five Channels, LLC

2. (Complete this item only if the limited liability company name in item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address) (City) (State) (ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO FIVE CHANNELS, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO FIVE CHANNELS, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. J. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335424 8300

SR# 20254383950

Authentication: 205148411

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO FOOTE, LLC
Foreign True Name:
Identity ID#: 900113696
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	(FOR BUREAU USE ONLY)
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	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name

Address

City | State | ZIP Code

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Foote, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 6c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda, MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO FOOTE, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO FOOTE, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. J. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

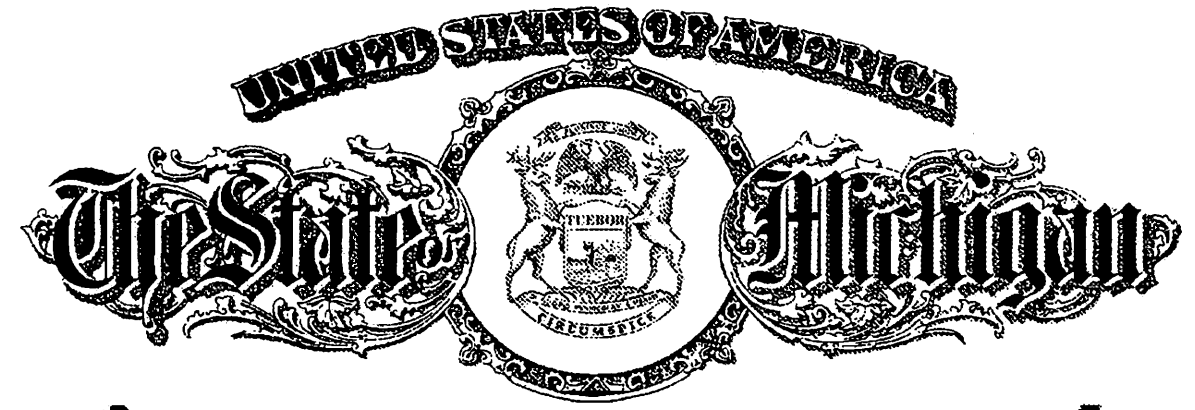
10335420 8300

SR# 20254383964

Authentication: 205148421

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml



Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO HARDY, LLC
Foreign True Name:
Identity ID#: 900113622
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.



In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
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Address	
City / State / ZIP Code	

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Hardy, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.) The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — (Type or Print Name)

General Counsel and Secretary — (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO HARDY, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO HARDY, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10335414 8300

SR# 20254383984

Authentication: 205148439

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO HODENPYL, LLC
Foreign True Name:
Identity ID#: 900113648
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
	This document is effective on the date filed, unless a subsequent effective date within 90 days after received date is stated in the document.

Name

Address

City State ZIP Code

Document will be returned to the name and address you enter above.
If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Hodenpyl, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220, Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — (Type or Print Name)

General Counsel and Secretary — (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO HODENPYL, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO HODENPYL, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. F. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336441 8300

SR# 20254383988

Authentication: 205148445

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO LOUD, LLC
Foreign True Name:
Identity ID#: 900113600
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

Date Received	AC1 (FOR BUREAU USE ONLY)
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Name	
Address	
City / State / ZIP Code	

Document will be returned to the name and address you enter above. If left blank, document will be returned to the registered office.

APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Loud, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is _____

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October, 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO LOUD, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO LOUD, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. J. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336450 8300

SR# 20254384487

Authentication: 205148853

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO MIO, LLC
Foreign True Name:
Identity ID#: 900113640
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Mio, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is _____

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO MIO, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO MIO, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336451 8300

SR# 20254383999

Authentication: 205148462

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO ROGERS, LLC
Foreign True Name:
Identity ID#: 900113593
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Rogers, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ae., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO ROGERS, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO ROGERS, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336457 8300

SR# 20254384502

Authentication: 205148856

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO SERVICES, LLC
Foreign True Name:
Identity ID#: 900113711
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Services, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is October 6, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda, MD 20814

(Street Address) (City) (State) (ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To provide services for power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 16 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO SERVICES, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO SERVICES, LLC" WAS FORMED ON THE SIXTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10357373 8300

SR# 20254384032

Authentication: 205148482

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYDRO TIPPY, LLC
Foreign True Name:
Identity ID#: 900113634
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Tippy, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.) The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October , 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO TIPPY, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO TIPPY, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. B. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336459 8300

SR# 20254384024

Authentication: 205148477

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

UNITED STATES OF AMERICA

The State of Michigan

Department of Licensing and Regulatory Affairs

Lansing, Michigan

This is to certify:

Entity Name: CONFLUENCE HYRDO WEBBER, LLC
Foreign True Name:
Identity ID#: 900113580
Initial Filing Date: 10/28/2025
Delayed Effective Date:
Entity Type: Foreign Limited Liability Company
Filing Type: Application for Certificate of Authority to Transact Business or Conduct Affairs in Michigan
Formation Jurisdiction: Delaware
Act Subject To: 023-1993 Michigan Limited Liability Company Act

The above referenced entity existing under the laws of the formation jurisdiction was validly authorized to conduct affairs in Michigan on the initial filing date, in conformity with the Act(s) it is formed under and subject to.

Said entity is authorized to transact in this state any business of the character set forth in its application which a domestic entity is formed under said statutes may lawfully transact. The authority shall continue as long as the above referenced entity retains its authority to transact such business in the jurisdiction of its formation and its authority to transact business in this state has not been surrendered, suspended, or revoked.

Pursuant the act subject to, the entity shall use the entity name, as it is set forth in this Certificate in all its dealings with this Department and in the transaction of business in this state.

This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.

LICENSING AND REGULATORY AFFAIRS
Corporations, Securities & Commercial Licensing Bureau
TUEBOR
CIRCUMSPICE

In testimony whereof, I have hereunto set my hand, in the City of Lansing, on October 28, 2025.

Linda Clegg

Linda Clegg, Director
Corporations, Securities & Commercial Licensing Bureau

CSCL/CD 760 (Rev. 07/25)

MICHIGAN DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
CORPORATIONS, SECURITIES & COMMERCIAL LICENSING BUREAU

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APPLICATION FOR CERTIFICATE OF AUTHORITY TO TRANSACT BUSINESS IN MICHIGAN

For use by Foreign Limited Liability Companies
(Please read information and instruction on last page)

Pursuant to the provisions of Act 23, Public Acts of 1993, the undersigned execute the following Application:

1. The name of the limited liability company is:

   Confluence Hydro Webber, LLC

2. (Complete this item only if the limited liability company name in Item 1 is not available for use in Michigan.)
   The assumed name of the limited liability company to be used in all its dealings with the Bureau and in the transaction of its business in Michigan is:

3. It is organized under the laws of Delaware

   The date of its organization is September 16, 2025

   The duration of the limited liability company if other than perpetual is

4. The address of the office required to be maintained in the state of organization or, if not so required, the principal office of the limited liability company is:

850 New Burton Road, Suite 201	Dover	Delaware	19904
(Street Address)	(City)	(State)	(ZIP Code)

5. a. The street address of its registered office in Michigan is:

186 N Main St FL 2 STE 1	Plymouth	, Michigan	48170
(Street Address)	(City)		(ZIP Code)

b. The mailing address of the registered office, if different than above:

		, Michigan	
(Street Address or P.O. Box)	(City)		(ZIP Code)

c. The name of the resident agent at the registered office is:

Cogency Global Inc.

6. The Department is appointed the agent of the foreign limited liability company for service of process if no agent has been appointed, or if appointed, the agent's authority has been revoked, the agent has resigned, or the agent cannot be found or served through the exercise of reasonable diligence.

The name and address of a member or manager or other person to whom the administrator is to send copies of any process served on the administrator is: **(Must be different than agent shown in Item 5c)**

Randall Osteen

(Name)

4747 Bethesda Ave., Suite 1220 Bethesda MD 20814

(Street Address)	(City)	(State)	(ZIP Code)

7. The specific business which the limited liability company is to transact in Michigan is as follows:

To own, operate and manage power generation resources within the state of Michigan.

The limited liability company is authorized to transact such business in the jurisdiction of its organization.

Signed this 9 day of October, 2025

By _____
(Signature)

Randall Osteen — General Counsel and Secretary

(Type or Print Name) (Type or Print Title)

Delaware

The First State

I, CHARUNI PATIBANDA-SANCHEZ, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "CONFLUENCE HYDRO WEBBER, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-SEVENTH DAY OF OCTOBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE SAID "CONFLUENCE HYDRO WEBBER, LLC" WAS FORMED ON THE SIXTEENTH DAY OF SEPTEMBER, A.D. 2025.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN ASSESSED TO DATE.

C. P. Sanchez

Charuni Patibanda-Sanchez, Secretary of State

10336461 8300

SR# 20254384517

Authentication: 205148860

Date: 10-27-25

You may verify this certificate online at corp.delaware.gov/authver.shtml

Attachment D

Limited Liability Company Agreements of Confluence Hydro Subsidiaries

Public Version
CUI//PRIV Information
Has Been Removed

Attachment E

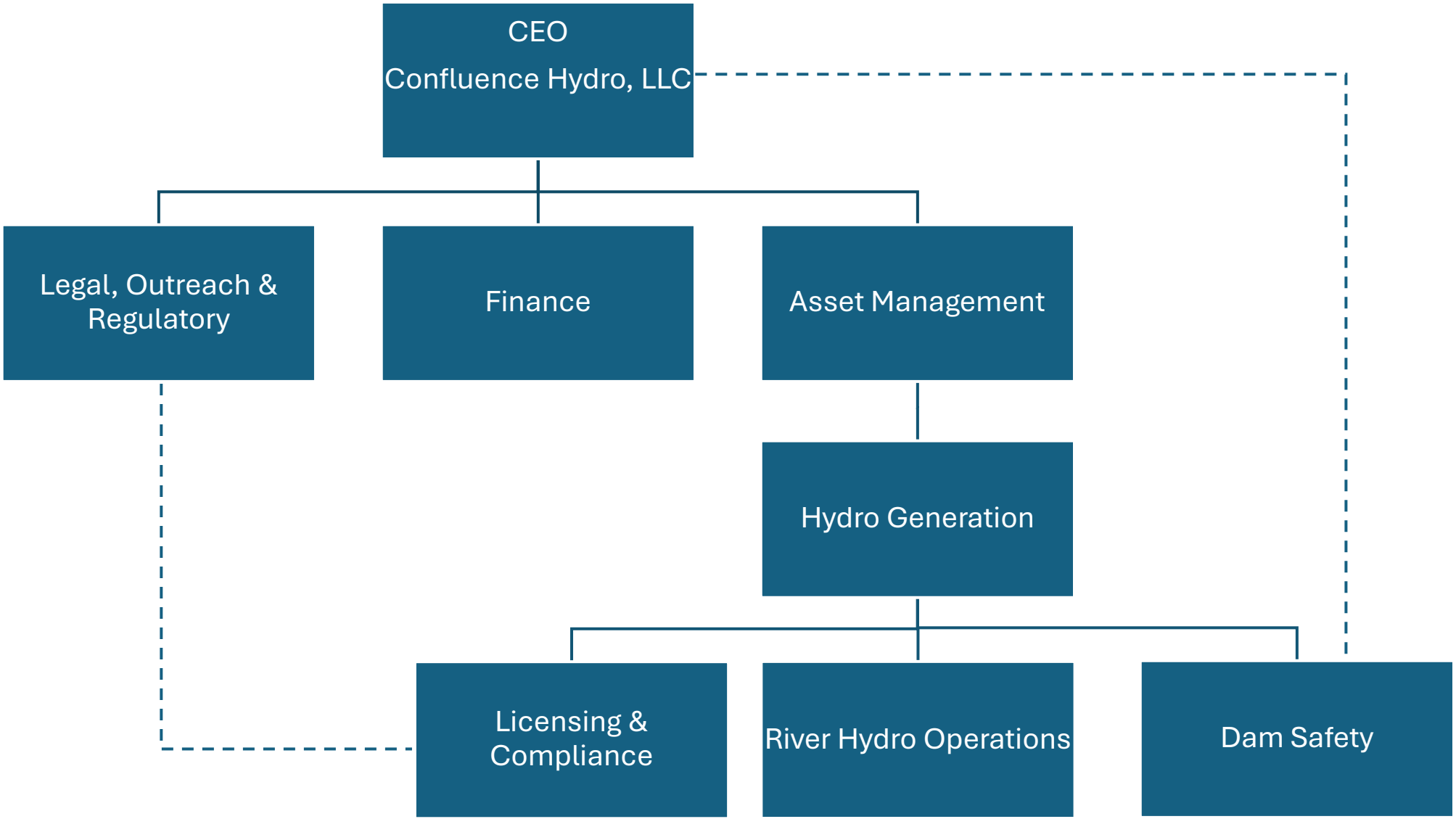
Financial Demonstration

Public Version
CUI//PRIV Information
Has Been Removed

Attachment F

Confluence Hydro, LLC Organizational Structure

Confluence Hydro, LLC Organizational Structure



Attachment G

Resume of Jillian Lawrence, PE, MS Eng.

Public Version
CUI//PRIV Information
Has Been Removed

Attachments to this application are confidential and being provided under seal to the MPSC

ATTACHMENT D

Troutman Pepper Locke LLP
401 9th Street, N.W., Suite 1000
Washington, D.C. 20004

troutman.com

Charles R. Sensiba
Partner
D 202.274.2850
charles.sensiba@troutman.com

VIA E-FILING

October 31, 2025

Debbie-Anne A. Reese
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: Calkins Bridge Hydroelectric Project No. 785; Foote Project No. 2436; Alcona Project No. 2447; Mio Project No. 2448; Loud Project No. 2449; Cooke Project No. 2450; Rogers Project No. 2451; Hardy Project No. 2452; Five Channels Project No. 2453; Croton Project No. 2468; Webber Hydroelectric Project No. 2566; Tippy Project No. 2580; and Hodenpyl Project No. 2599
Application for Non-Capacity Related Amendments of Licenses and Request for Non-Project Use of Project Lands

Dear Secretary Reese:

Consumers Energy Company (Consumers Energy) hereby files this Application for Non-Capacity Related Amendments of Licenses and Request for Non-Project Use of Project Lands (Application) with the Federal Energy Regulatory Commission (FERC or Commission) for the following 13 hydropower projects licensed to Consumers Energy and located in Michigan: Calkins Bridge Hydroelectric Project No. 785; Foote Project No. 2436; Alcona Project No. 2447; Mio Project No. 2448; Loud Project No. 2449; Cooke Project No. 2450; Rogers Project No. 2451; Hardy Project No. 2452; Five Channels Project No. 2453; Croton Project No. 2468; Webber Hydroelectric Project No. 2566; Tippy Project No. 2580; and Hodenpyl Project No. 2599 (collectively, Projects).

This Application is necessary to effectuate the purchase and sale of the Projects from Consumers Energy to Confluence Hydro, LLC (Confluence Hydro), as detailed in the Joint Application for Approval of Transfer of Licenses (License Transfer Application) filed with the Commission concurrent with this Application and consistent with the terms of the September 3, 2025, Purchase and Sale Agreement (PSA).

This Application seeks to ensure that, upon license transfer, only the project works necessary for project operations are included in each license, and that Consumers Energy's non-project distribution equipment is removed from each project license. Based on this, Consumers Energy proposes to amend, as needed for each project: (1) the project description as provided in the applicable ordering paragraph of the most recent relicensing or amendment order; (2) Exhibit A;

and/or (3) Exhibit F. With these requested amendments, existing distribution infrastructure and equipment that Consumers Energy will retain after transferring the Projects to Confluence Hydro for purposes of supporting its ongoing responsibilities as the local load-serving utility will be removed from the Projects' licenses.

This Application also seeks authorization for non-project use of project lands at the Projects for Consumers Energy to continue to access project lands post-transfer for purposes of maintaining and operating its existing, non-project distribution infrastructure consistent with historic practices.

Because approval of both this Application and the License Transfer Application are needed to consummate the PSA and otherwise close the transaction between Consumers Energy and Confluence Hydro, Consumers Energy respectfully requests the Commission to process this Application concurrently with the License Transfer Application, and to approve this Application on or before the date it approves the License Transfer Application.

In accordance with FERC's regulations governing Critical Energy Infrastructure Information (CEII),[1] information included in this Application contains CEII and is being filed in a separate attachment for inclusion in FERC's non-public file. The attached Exhibit F design drawings (Attachments 5, 8, 11, 14, 18, 22, 23, and 24), as well as the maps provided in Attachment 28, include sensitive and detailed engineering or locational information detailing the critical infrastructure at the Projects that, if used incorrectly, may compromise the safety of the Projects and those responsible for its proper operation. As such, Consumers Energy respectfully requests that FERC maintain this information in its non-public file as CEII.[2] Each page of these attachments has been marked as "CUI//CEII."

Consumers Energy appreciates the Commission's consideration of this Application. Should you have any questions, please contact the undersigned.

Respectfully submitted,



Charles R. Sensiba
Counsel to Consumers Energy Company

Enclosure: Application for Non-Capacity Related Amendments of Licenses and Request for Non-Project Use of Project Lands

1 18 C.F.R. § 388.113.

2 *Id.* § 388.113(d)(1)(ii).

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Project Nos. 785; 2436; 2447;**
	)	**2448; 2449; 2450; 2451; 2452;**
	)	**2453; 2468; 2566; 2580; 2599**

APPLICATION FOR NON-CAPACITY RELATED AMENDMENTS OF LICENSES AND REQUEST FOR NON-PROJECT USE OF PROJECT LANDS

Pursuant to section 6 of the Federal Power Act (FPA),[1] section 4.200 of the Federal Energy Regulatory Commission's (Commission or FERC) regulations,[2] and Standard Article 5,[3] Consumers Energy Company (Consumers Energy) submits this Application for Non-Capacity Related Amendments of Licenses and Request for Non-Project Use of Project Lands (Application) involving the following 13 hydropower projects licensed to Consumers Energy and located in Michigan: Calkins Bridge Hydroelectric Project (FERC Project No. 785); Foote Project (FERC Project No. 2436); Alcona Project (FERC Project No. 2447); Mio Project (FERC Project No. 2448); Loud Project (FERC Project No. 2449); Cooke Project (FERC Project No. 2450); Rogers Project (FERC Project No. 2451); Hardy Project (FERC Project No. 2452); Five Channels Project (FERC Project No. 2453); Croton Project (FERC Project No. 2468); Webber Hydroelectric Project (FERC Project No. 2566); Tippy Project (FERC Project

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1 16 U.S.C. § 799.

2 18 C.F.R. § 4.200.

3 *E.g.*, Form L-5, Terms and Conditions of License for Constructed Major Project Affecting Navigable Waters and Lands of the United States, 54 F.P.C. 1832, 1826-27 (1975).

No. 2580); and Hodenpyl Project (FERC Project No. 2599) (collectively, Projects).

This Application is necessary to effectuate the purchase and sale of the Projects from Consumers Energy to subsidiaries of Confluence Hydro, LLC (Confluence Hydro), as set forth in the Joint Application for Approval of Transfer of Licenses (License Transfer Application) filed with the Commission concurrent with this Application and consistent with the terms of a September 3, 2025, Purchase and Sale Agreement (PSA). As detailed herein, the license amendments and request for approval of non-project use of project lands sought in this Application are needed to implement the PSA by precisely demarcating, for each Project:

1. the licensed project works that the respective Confluence Hydro subsidiary will own and be responsible for operating and maintaining as the new licensee;
2. existing distribution infrastructure that will remain in Consumers Energy's ownership (e.g., substations, distribution lines, and transmission facilities) that, while not needed for purposes of the FERC-licensed Projects, are currently identified in various license exhibits as licensed project works and require removal from the applicable license; and
3. lands within the project boundary of each Project that Consumers Energy will need continued access to, for purposes of continued operation and maintenance of non-project distribution infrastructure, consistent with current practices, therefore requiring Commission approval for non-project use and occupancy of Project lands.

The various approvals sought in this Application are summarized in Table 1

below and presented in a set of proposed Ordering Paragraphs set forth in Attachment 1.

Table 1 – Non-Capacity License Amendments and Non-Project Use of Project Lands Summary

Project Name	FERC Project No.	Amended Project Description	Amended Exhibit A	Amended Exhibit F	Non-Project Use
Calkins Bridge Project	P-785	None	None	None	Yes
Foote Project	P-2436	Yes	Yes	Yes	Yes
Alcona Project	P-2447	None	Yes	Yes	Yes
Mio Project	P-2448	None	Yes	Yes	Yes
Loud Project	P-2449	None	Yes	Yes	Yes
Cooke Project	P-2450	Yes	Yes	Yes	Yes
Rogers Project	P-2451	None	None	None	Yes
Hardy Project	P-2452	None	None	None	Yes
Five Channels Project	P-2453	Yes	Yes	Yes	Yes
Croton Project	P-2468	None	None	None	Yes
Webber Project	P-2566	None	None	Yes	Yes
Tippy Project	P-2580	None	None	None	Yes
Hodenpyl Project	P-2599	None	None	Yes	Yes

Because approval of both this Application and the License Transfer Application are needed to consummate the PSA and otherwise close the transaction between Consumers Energy and Confluence Hydro, Consumers Energy respectfully requests the Commission to process this Application concurrently with the License Transfer Application, and to approve this Application on or before the date it approves the License

Transfer Application.

I. INITIAL STATEMENT

Pursuant to section 4.201 of the Commission's regulations,[4] Consumers Energy (Applicant) states as follows:

1. Consumers Energy applies to the Commission for a non-capacity related license amendment and authorization for non-project use of project lands for the following Projects:

   Calkins Bridge Hydroelectric Project, FERC Project No. 785, which is located on the Kalamazoo River in Allegan County, Michigan;

   Foote Project, FERC Project No. 2436, which is located on the Au Sable River in Iosco County, Michigan;

   Alcona Project, FERC Project No. 2447, which is located on the Au Sable River in Alcona County, Michigan;

   Mio Project, FERC Project No. 2448, which is located on the Au Sable River in Alcona County, Michigan;

   Loud Project, FERC Project No. 2449, which is located on the Au Sable River in Oscoda County, Michigan;

   Cooke Project, FERC Project No. 2450, which is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan;

   Rogers Project, FERC Project No. 2451, which is located on the Muskegon River in Mecosta County, Michigan;

   Hardy Project, FERC Project No. 2452, which is located on the Muskegon River in Newaygo and Mecosta Counties, Michigan;

   Five Channels Project, FERC Project No. 2453, which is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan;

   Croton Project, FERC Project No. 2468, which is located on the Muskegon River in Newaygo County, Michigan;

[4] 18 C.F.R. § 4.201.

Webber Hydroelectric Project, FERC Project No. 2566, which is located on the Grand River near the City of Portland, in Ionia County, Michigan;

Tippy Project, FERC Project No. 2580, which is located on the Manistee River, within the Manistee National Forest in Manistee County, Michigan; and

Hodenpyl Project, FERC Project No. 2599, which is located on the Manistee River, within the Manistee National Forest in Manistee and Wexford Counties, Michigan.

2. *The exact name, business address, and telephone number of the Applicant is:*

Consumers Energy Company
One Energy Plaza
Jackson, MI 49201
Phone: (800) 477-5050

The exact name, business address, and telephone number of each person authorized to act as agent for the Applicant in this Application are:

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2. Consumers Energy is a domestic corporation and is the licensee for the following waterpower projects, as designated in the records of the Commission:

Calkins Bridge Hydroelectric Project (FERC Project No. 785) – The current license for this project was issued on January 15, 2010.[5]

Foote Project (FERC Project No. 2436) – The current license for this project was issued on July 15, 1994.[6]

Alcona Project (FERC Project No. 2447) – The current license for this project was issued on July 15, 1994.[7]

Mio Project (FERC Project No. 2448) – The current license for this project was issued on July 15, 1994.[8]

Loud Project (FERC Project No. 2449) – The current license for this project was issued on July 15, 1994.[9]

Cooke Project (FERC Project No. 2450) – The current license for this

[5] *Consumers Energy Co.*, 130 FERC ¶ 62,052 (2010).

[6] *Consumers Power Co.*, 68 FERC ¶ 61,082 (1994).

[7] *Consumers Power Co.*, 68 FERC ¶ 61,082 (1994).

[8] *Consumers Power Co.*, 68 FERC ¶ 61,072 (1994).

[9] *Consumers Power Co.*, 68 FERC ¶ 61,075 (1994).

project was issued on July 15, 1994.[10]

Rogers Project (FERC Project No. 2451) – The current license for this project was issued on July 15, 1994.[11]

Hardy Project (FERC Project No. 2452) – The current license for this project was issued on July 15, 1994.[12]

Five Channels Project (FERC Project No. 2453) – The current license for this project was issued on July 15, 1994.[13]

Croton Project (FERC Project No. 2468) – The current license for this project was issued on July 15, 1994.[14]

Webber Hydroelectric Project (FERC Project No. 2566) – The current license for this project was issued on June 20, 2001.[15]

Tippy Project (FERC Project No. 2580) – The current license for this project was issued on July 15, 1994.[16]

Hodenpyl Project (FERC Project No. 2599) – The current license for this project was issued on July 15, 1994.[17]

4. *The amendment of license proposed and the reason(s) why the proposed change is necessary:*

The purposes of this Application are to: (1) amend the project description, Exhibit A, and Exhibit F of certain of the Projects' licenses to remove existing, non-jurisdictional distribution infrastructure that is not needed for purposes of the FERC-licensed Projects; and (2) authorize Consumers Energy (as the prospective non-licensee) to continue to access and occupy certain project lands following license transfer, to facilitate its continued operation and maintenance of existing distribution infrastructure located

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[10] *Consumers Power Co.*, 68 FERC ¶ 61,071 (1994).

[11] *Consumers Power Co.*, 68 FERC ¶ 61,074 (1994).

[12] *Consumers Power Co.*, 68 FERC ¶ 61,076 (1994).

[13] *Consumers Power Co.*, 68 FERC ¶ 61,073 (1994).

[14] *Consumers Power Co.*, 68 FERC ¶ 61,079 (1994).

[15] *Consumers Energy Co.*, 95 FERC ¶ 62,246 (2001).

[16] *Consumers Power Co.*, 68 FERC ¶ 61,080 (1994).

[17] *Consumers Power Co.*, 68 FERC ¶ 61,083 (1994).

with the Projects' boundaries, consistent with current practices.

This Application does not seek approval of any new or changed project operations, construction, or ground disturbing activities. It only seeks ministerial, administrative changes to and approvals under the Projects' licenses to effectuate the PSA between Consumers Energy and Confluence Hydro.

5. *(i) The statutory or regulatory requirements of the state(s) in which the Project would be located that affect the Project as proposed with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes are:*

This Application only seeks administrative changes to the Projects' licenses, together with authorization for non-project use of project lands, associated with existing non-project distribution infrastructure located within the Projects' boundaries consistent with current practices. No new or changed project operations, construction, or ground disturbing activities are proposed in connection with this Application. Accordingly, this Application does not involve any state requirements related to the bed and banks or the appropriation, diversion, and use of water for power purposes.

(ii) The steps which the applicant has taken or plans to take to comply with each of the laws cited above are:

Not applicable.

6. In accordance with section 4.201(b) of the Commission's regulations[18] and Standard Article 5, the following proposed amendments to the Projects' licenses are contained in this Application:[19]

For the Calkins Bridge Hydroelectric Project No. 785:

- Non-Project Use of Project Land[20]

For the Foote Project No. 2436:

- Project Description – from the *Order Issuing New License*,[21]

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[18] 18 C.F.R. § 4.201.

[19] All the approvals sought in this Application are presented in a set of proposed Ordering Paragraphs set forth in Attachment 1.

[20] Attachment 28 at p. 1.

[21] *Consumers Power Co.*, 68 FERC ¶ 61,075 (1994), as amended by *Consumers Energy Co.*, 192 FERC ¶ 62,054 (2025) (approving revised Exhibit A and revising project description).

Ordering Paragraph (B)(2)[22]

- Exhibit A – Project Description[23]
- Exhibit F-2 – General Design Drawing[24]
- Non-Project Use of Project Land[25]

For the Alcona Project No. 2447:

- Exhibit A – Project Description[26]
- Exhibit F-1 – General Design Drawing[27]
- Non-Project Use of Project Land[28]

For the Mio Project No. 2448:

- Exhibit A – Project Description[29]
- Exhibit F-2 – General Design Drawing[30]
- Non-Project Use of Project Land[31]

For the Loud Project No. No. 2449:

- Exhibit A – Project Description[32]
- Exhibit F-1 – General Design Drawing[33]
- Non-Project Use of Project Land[34]

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[22] Attachment 2.

[23] Attachment 3 (redline version); Attachment 4 (clean version).

[24] Attachment 5.

[25] Attachment 28 at p. 2.

[26] Attachment 6 (redline version); Attachment 7 (clean version).

[27] Attachment 8.

[28] Attachment 28 at p. 3.

[29] Attachment 9 (redline version); Attachment 10 (clean version).

[30] Attachment 11.

[31] Attachment 28 at p. 4.

[32] Attachment 12 (redline version); Attachment 13 (clean version).

[33] Attachment 14.

[34] Attachment 28 at p. 5.

For the Cooke Project No. 2450:

- Project Description – from the Order Issuing New License,[35] Ordering Paragraph (B)(2)[36]
- Exhibit A – Project Description[37]
- Exhibit F-2 – General Design Drawings[38]
- Non-Project Use of Project Land[39]

For the Rogers Project No. 2451:

- Non-Project Use of Project Land[40]

For the Hardy Project No. 2452:

- Non-Project Use of Project Land[41]

For the Five Channels Project No. 2453:

- Project Description – from the *Order Issuing New License*,[42] Ordering Paragraph (B)(2)[43]
- Exhibit A – Project Description[44]
- Exhibit F-2 – General Design Drawings[45]
- Non-Project Use of Project Land[46]

For the Croton Project No. 2468:

- Non-Project Use of Project Land[47]

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35 *Consumers Power Co.*, 68 FERC ¶ 61,071 (1994).

36 Attachment 15.

37 Attachment 16 (redline version); Attachment 17 (clean version).

38 Attachment 18.

39 Attachment 28 at p. 6.

40 Attachment 28 at p. 7.

41 Attachment 28 at p. 8.

42 *Consumers Power Co.*, 68 FERC ¶ 61,073 (1994).

43 Attachment 19.

44 Attachment 20 (redline version); Attachment 21 (clean version).

45 Attachment 22.

46 Attachment 28 at p. 9.

47 Attachment 28 at p. 10.

For the Webber Hydroelectric Project No. 2566:

- Exhibit F-1 – General Project Drawings[48]
- Non-Project Use of Project Land[49]

For the Tippy Project No. 2580:

- Non-Project Use of Project Land[50]

For the Hodenpyl Project No. 2599:

- Exhibit F-2 – General Design Drawing[51]
- Non-Project Use of Project Land[52]

7. In accordance with section 4.32(a)(4) of the Commission's regulations,[53] Consumers Energy's subscription and verification appears in Attachment 29.

II. BACKGROUND

This Application seeks non-capacity related amendments and non-project land use authorizations for Consumers Energy's 13 small hydropower projects in Michigan. These administrative approvals are crucial for the transfer of the Projects' licenses to Confluence Hydro's subsidiaries, as outlined in the License Transfer Application and PSA. This Application seeks to ensure that, upon license transfer, only project works necessary for project operations are included in each license, and that Consumers Energy's non-project distribution equipment is removed from each license. The Application also seeks authorization for Consumers Energy to continue to access project lands for purposes of maintaining and operating its existing, non-project distribution infrastructure consistent with historic practices.

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48 Attachment 23.

49 Attachment 28 at p. 11.

50 Attachment 28 at p. 12.

51 Attachment 24.

52 Attachment 28 at p. 13.

53 18 C.F.R. § 4.32(a)(4).

The proposed non-capacity amendments and non-project use authorizations are administrative in nature and do not involve any construction or ground-disturbing activities.

A. Description of Consumers Energy's Projects

1. Calkins Bridge Hydroelectric Project (FERC No. 785)

The Calkins Bridge Hydroelectric Project is located on the Kalamazoo River in Allegan County, Michigan, and has an authorized installed capacity of 2.55 megawatts (MW). The project generally consists of a gravity dam, powerhouse, spillway a reservoir known as Lake Allegan, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on January 15, 2010, for a period of 30 years.

2. Foote Project (FERC No. 2436)

The Foote Project is located on the Au Sable River in Iosco County, Michigan, and has an authorized installed capacity of 7.229 MW. The project occupies 484 acres of federal lands within the Huron National Forest, which is administered by the U.S. Forest Service. The project generally consists of a dam with two earth fill embankment sections, spillway, powerhouse, impoundment, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

3. Alcona Project (FERC No. 2447)

The Alcona Project is located on the Au Sable River in Alcona County, Michigan, and has an authorized installed capacity of 8 MW. The project occupies 364 acres of federal lands within the Huron National Forest. The project generally consists of a dam with two earth fill embankment sections, spillway, powerhouse, impoundment,

transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

4. Mio Project (FERC No. 2448)

The Mio Project is located on the Au Sable River in Oscoda County, Michigan, and has an authorized installed capacity of 3.885 MW. The project occupies 320 acres of federal lands within the Huron National Forest. The project generally consists of a dam with two earth fill embankment sections, spillways, impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

5. Loud Project (FERC No. 2449)

The Loud Project is located on the Au Sable River in Iosco County, Michigan, and has an authorized installed capacity of 4 MW. A portion of the project occupies federal lands within the Huron National Forest. The project generally consists of a dam with two earth embankments, powerhouse, spillway, impoundment, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

6. Cooke Project (FERC No. 2450)

The Cooke Project is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan, and has an authorized installed capacity of 6.609 MW. The project generally consists of two earth embankment dam sections, spillway, impoundment, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

7. Rogers Project (FERC No. 2451)

The Rogers Project is located in Mecosta County, Michigan, on the Muskegon River and has an authorized installed capacity of 5.418 MW. The project generally consists of three earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

8. Hardy Project (FERC No. 2452)

The Hardy Project is located on the Muskegon River in Newaygo and Mecosta Counties, Michigan, and has an authorized installed capacity of 29.6 MW. The project generally consists of an earth embankment dam, spillway, impoundment, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

9. Five Channels Project (FERC No. 2453)

The Five Channels Project is located on the Au Sable River, within the Huron National Forest in Iosco County, Michigan, and has an authorized installed capacity of 6 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

10. Croton Project (FERC No. 2468)

The Croton Project is located in Newaygo County, Michigan, on the Muskegon River and has an authorized installed capacity of 7.473 MW. The project generally consists of two earth embankments, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license

for the project on July 15, 1994, for a period of 40 years.

11. Webber Hydroelectric Project (FERC No. 2566)

The Webber Hydroelectric Project is located on the Grand River, in Ionia County, Michigan, and has an authorized installed capacity of 3.25 MW. The project generally consists of a dam, reservoir, powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on June 20, 2001, for a period of 40 years.

12. Tippy Project (FERC No. 2580)

The Tippy Project is located on the Manistee River, within the Manistee National Forest in Manistee County, Michigan, and has an authorized installed capacity of 14.255 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

13. Hodenpyl Project (FERC No. 2599)

The Hodenpyl Project is located on the Manistee River, within the Manistee National Forest in Manistee and Wexford Counties, Michigan, and has an authorized installed capacity of 13.884 MW. The project generally consists of two earth embankment dam sections, a spillway, an impoundment, a powerhouse, transmission facilities, and appurtenant facilities. The Commission issued a new license for the project on July 15, 1994, for a period of 40 years.

B. Proposed Transfer of Projects to Confluence Hydro Subsidiaries

On September 3, 2025, Consumers Energy and Confluence Hydro entered into the PSA, which provides for the purchase and sale of the 13 small Projects, and for the

transfer of each Project's respective license to a Confluence Hydro subsidiary. After a years-long public process in which Consumers Energy identified and analyzed various options for the century-old dams that are associated with these Projects, Consumers Energy decided to convey the Projects to Confluence Hydro. This transaction is expected not only to reduce long-term costs for Consumers Energy's customers, but also to allow Confluence Hydro, through its Confluence Hydro subsidiaries, to safely deliver reliable, clean energy, and support economic and recreational opportunities that Michigan communities have enjoyed for more than a century. During the robust public outreach phase of this investigation, the communities that have hosted and depended upon these dams and reservoirs overwhelmingly supported and advocated for their preservation.

Because Consumers Energy is both the local electric utility and has owned and operated the facilities for more than a century, various distribution infrastructure and equipment that is not needed for purposes of the FERC-licensed Projects exists within the designated project boundaries of several of these developments. Moreover, the various license exhibits and descriptions have, in some instances, identified Consumers Energy's distribution infrastructure and equipment that is not needed for purposes of the FERC-licensed project.

To address this, and to avoid a regulatory requirement where both Consumers Energy and the various Confluence Hydro subsidiaries would be required to be co-licensees of any of the Projects, Consumers Energy and Confluence Hydro when negotiating the PSA carefully evaluated system and single-line drawings and license terms on a project-by-project basis to determine the point at which power generated at each project is integrated into Consumers Energy's distribution / integrated transmission

system. This evaluation took into consideration the Commission's standards for identifying project works and primary transmission lines. This evaluation identified infrastructure that is currently associated with the Projects (either as currently identified project works and/or physically located within a project boundary), but which is beyond the point where each Project's primary transmission line junctions with Consumers Energy's distribution system or the interconnected transmission system. In general terms, the infrastructure identified in these analyses consists of distribution substations and above- and under-ground distribution lines.

Based on these analyses, the PSA precisely defines the infrastructure, real property, and other assets and liabilities that will be conveyed from Consumers Energy to the Confluence Hydro subsidiaries. The PSA also precisely defines distribution infrastructure that Consumers Energy will continue to own, operate, and maintain as the local load-serving utility. Finally, the PSA establishes easements and other land rights that will allow Consumers Energy to access its distribution infrastructure located on project lands for the limited purpose of maintaining and operating the retained distribution infrastructure.

By precisely defining the infrastructure that will be sold to Confluence Hydro or retained by Consumers Energy, the PSA ensures that: (1) Confluence Hydro subsidiaries will assume ownership and operational control over all project works necessary to generate electricity at the Projects; (2) Consumers Energy will retain ownership, operational control, and access rights necessary to operate and maintain its integrated distribution grid and safely and reliably serve its retail customers consistent with historic practices; and (3) Consumers Energy and the Confluence Hydro subsidiaries will avoid a

circumstance in which they would need to be co-licensees for any of the Projects.

This Application has been prepared consistent with the transfer and retention of assets and property rights carefully negotiated in the PSA. This Application proposes to: (1) remove from each applicable Project license existing distribution infrastructure and equipment that Consumers Energy will retain after transferring the Projects to the Confluence Hydro subsidiaries, to support its ongoing responsibilities as the local load-serving utility; and (2) establish occupancy and access rights under each Project's license for Consumers Energy's non-project distribution infrastructure and equipment within each Project's boundary.

III. REQUEST FOR NON-CAPACITY AMENDMENTS OF LICENSES

Under section 4(e) the FPA, the Commission is authorized to issue licenses:

> for the purpose of constructing, operating, and maintaining dams, water conduits, reservoirs, power houses, transmission lines, or other *project works* necessary or convenient for the development and improvement of navigation and for the development, transmission, and utilization of power . . . .[54]

Section 3(12) of FPA defines "project works" as the "physical structures of a project,"[55] and further defines a "project" as consisting of, among other things, "the primary line or lines transmitting power [from the unit of development] to the point of junction with the distribution system or with the interconnected primary transmission system, [and] all miscellaneous structures used and useful in connection with said unit or any part thereof . . . ."[56] Exhibit A of Commission-issued licenses, in turn, is required to identify all infrastructure that is licensed under the FPA, including "[t]he number, length, voltage,

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[54] 16 U.S.C. § 797(e) (emphasis added).

[55] *Id.* § 796(12).

[56] *Id.* § 796(11).

and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project."[57] Exhibit F "consists of general design drawings of the principal project works" described in Exhibit A.[58]

For purposes of identifying a project's primary transmission line that must be included as licensed project works under Exhibits A and F, the Commission has explained that a primary transmission line is one that is:

> necessary to ensure the "viability" of the project in the event of Federal takeover. If a line "is used solely to transmit power from [Commission] licensed projects to load centers," and if without it "there would be no way to market the full capacity of the project," then that line is primary to the project . . . .[59]

Infrastructure not meeting these tests is not subject to the Commission's FPA jurisdiction and does not belong in a project license.[60] The Commission has recognized that the identification of a project's primary transmission line is, at bottom, a functional, case-specific, and factual inquiry.[61]

With respect to Consumers Energy's Projects that are the subject of this Application, the distribution substations, lines, and other infrastructure and equipment proposed for removal from the Projects' respective Exhibit A and/or Exhibit F constitute a part of Consumers Energy's retail distribution system and do not meet the

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[57] *E.g.*, 18 C.F.R. § 4.51(b).

[58] *E.g.*, *id.* § 4.41(g).

[59] *Pac. Gas & Elec. Co.*, 85 FERC ¶ 61,411, at p. 62,559 (1998) (quoting *Niagara Mohawk Power Corp.*, 5 FERC ¶ 61,301, at p. 61,646 (1978)).

[60] *E.g.*, *City of Radford*, 168 FERC ¶ 62,105 (2019) (removing licensed transmission infrastructure from the project boundary because the infrastructure is part of the local distribution grid and does not meet the definition of FPA section 3(11)); *N.Y. Power Auth.*, 98 FERC ¶ 61,033 (2002).

[61] *E.g.*, *Androscoggin Reservoir Co.*, 189 FERC ¶ 62,063 (2024).

Commission's test, described above, for identifying a "primary transmission line." The substations over which Consumers Energy will continue to own and operate to step-up project output to the requisite distribution voltage, and the distribution lines proposed for removal, integrate the distribution voltage energy into Consumers Energy's consolidated transmission and distribution system. As such, these facilities do not need to be part of the Projects' licenses. Following license transfer, in fact, the Confluence Hydro subsidiaries will not have any operational control over Consumers Energy's distribution facilities.

As detailed in the following project-specific sections, in some cases, the description of a Project's primary transmission line will be amended to include only those circuits that deliver project output to Consumers Energy's distribution substations. Those substations constitute the functional point at which the Project's "project works" for FPA purposes end and Consumers Energy's non-project distribution system begins, both technically and operationally. Accordingly, the proposed amendments to the project descriptions from prior ordering paragraphs, together with amendments to Exhibits A and F, as presented below, are consistent with the FPA, the Commission's regulations, and Commission precedent described above.

A. Foote Project No. 2436 – Proposed Non-Capacity Amendment

For the Foote Project, Consumers Energy seeks a limited amendment to remove local distribution infrastructure from the license. First, Consumers Energy proposes to remove reference to the 4.8-46 kV distribution substation near the powerhouse from the project description as set forth in the Commission's orders, as well as Exhibit A and Exhibit F-2. This equipment removed from the license as a result of these changes is part of Consumers Energy's local distribution system and is thus not "used and useful" for

Confluence Hydro's project operations as required by FPA section 3(11).

Second, Consumers Energy proposes to amend the project description, Exhibit A, and Exhibit F-2 to redefine the primary transmission line. The primary transmission line is currently described as the 46 kV lines running from Consumers Energy's 4.8-46 kV distribution substation to an interconnection with other components of Consumers Energy's interconnected local distribution system. The 4.8-46 kV distribution substation is the point at which output from the Foote Project is delivered to the interconnected transmission/distribution system. Thus, these lines proposed for removal from the license do not qualify as "primary transmission lines" necessary to move project output to the interconnected grid.

Consumers Energy's proposed amendments to the Foote Project license are specified in the following Attachments:

Foote Project No. 2436 Attachments	
Attachment 2	Redline showing proposed amendments to the Project Description in the license issued on July 15, 1994, as amended July 29, 2025
Attachment 3	Redline showing proposed amendments to Exhibit A
Attachment 4	Clean version of amended Exhibit A
Attachment 5 (CUI/CEII)	Illustrative markup of Exhibit F-2 identifying drawing elements proposed for removal from that exhibit. Exhibit F-2 currently identifies the 4.8-46 kV distribution substation as excluded from the license. Consumers Energy proposes to remove the -46 kV distribution substation from Exhibit F-2 consistent with the proposed amendments to Exhibit A.

B. Alcona Project No. 2477 – Proposed Non-Capacity Amendment

For the Alcona Project, Consumers Energy proposes a limited amendment of Exhibit A and Exhibit F-1 to remove distribution-level infrastructure from the license. These exhibits currently identify a "distribution substation" and "138 kV substation" both located a short distance downstream from the powerhouse as a project work. The

distribution substations are the point at which output from the Alcona Project is delivered to Consumers Energy's local distribution system. Thus, the substations are not "used and useful" for Confluence Hydro's project operations and is therefore not required to be licensed.

Consumers Energy's proposed amendments to the Alcona Project license are specified in the following Attachments:

Alcona Project No. 2477 Attachments	
Attachment 6	Redline showing proposed amendments to Exhibit A
Attachment 7	Clean version of amended Exhibit A
Attachment 8 (CUI/CEII)	Illustrative markup of Exhibit F-1 identifying drawing elements proposed for removal from that exhibit. Exhibit F-1 currently identifies a "distribution substation" and "138 kV substation." Consumers Energy proposes to remove reference to these substations from Exhibit F-1.

C. Mio Project No. 2448 – Proposed Non-Capacity Amendment

For the Mio Project, Consumers Energy proposes a limited amendment to define the Mio Project's primary transmission line. The currently approved Exhibit A states that there "are no primary transmission lines included in the Mio Project license." Consumers Energy proposes to amend Exhibit A to define the primary transmission line as the 400-foot line that connects the 138 kV project substation to the non-project ITC/METC 138 kV substation.

Consumers Energy also proposes to amend Exhibit F-2 to remove the depiction of the non-project 138 kV ITC/METC substation.

Consumers Energy's proposed amendments to the Mio Project license are specified in the following Attachments:

Mio Project No. 2448 Attachments	
Attachment 9	Redline showing proposed amendments to Exhibit A
Attachment 10	Clean version of amended Exhibit A

Attachment 11 (CUI/CEII)	Illustrative markup of Exhibit F-2 identifying drawing elements proposed for removal from that exhibit. Exhibit F-2 currently depicts the non-project 138 kV ITC/METC substation. Consumers Energy proposes to remove this non-project substation from Exhibit F-2.

D. Loud Project No. 2449 – Proposed Non-Capacity Amendment

For the Loud Project, Consumers Energy proposes a limited amendment to remove local distribution infrastructure from the license. The license currently identifies a 2.5-46 kV distribution substation near the powerhouse as a project work. However, this equipment is part of Consumers Energy's integrated, local distribution system. Thus, the substation is not "used and useful" for Confluence Hydro's project operations.

To address this issue, Consumers Energy proposes to remove the 2.5-46 kV substation from Exhibit A and Exhibit F-2 of the Loud Project license. Additionally, Consumers Energy proposes to amend Exhibit A and Exhibit F-2 to clarify that the primary transmission line includes the circuits running from each generating unit to Consumers Energy's 46 kV substation. The revised Exhibit F-1 will also remove the depiction of the non-project lines exiting the 46 kV non-distribution and the 138 kV distribution substation, which is currently not identified as a project work in Exhibit A.

Consumers Energy's proposed amendments to the Loud Project license are specified in the following Attachments:

Loud Project No. 2449 Attachments	
Attachment 12	Redline showing proposed amendments to Exhibit A
Attachment 13	Clean version of amended Exhibit A
Attachment 14 (CUI/CEII)	Illustrative markup of Exhibit F-1 identifying drawing elements proposed for removal from that exhibit. Exhibit F-1 currently identifies the 2.4-4.6 kV distribution substation (denoted as "distribution substation") and the 138 kV substation (not identified as a project work in Exhibit A). Consumers Energy proposes to remove reference to the distribution substation and 138 kV substation from Exhibit F-1.

E. Cooke Project No. 2450 – Proposed Non-Capacity Amendment

For the Cooke Project, Consumers Energy proposes a limited amendment to remove distribution-level infrastructure from the license. Exhibit A currently identifies a 2.4-46 kV distribution substation and an adjacent 2.4-4.8 kV distribution substation as project works. These distribution substations are part of Consumers Energy's local distribution system, as they serve regional distribution and load serving functions. Accordingly, the substations are not "used and useful" for Confluence Hydro's project operations.

The 2.4-46 kV distribution substation and distribution circuits are identified in Exhibit F-2. The 2.4-48 kV distribution substation is denoted as "exclude from project license."

For these reasons, Consumers Energy proposes first to remove the 2.4-46 kV and 2.4-4.8 kV substations from Exhibit A and Exhibit F-2 of the Cooke Project license.

Second, Consumers Energy proposes to redefine the primary transmission line described in the project description as stated in the Commission's prior ordering paragraphs and Exhibit A. The primary transmission line is currently described as the "46 kV transmission line, approximately 150 feet in length, from the substation" to the interconnection with other components of Consumers Energy's interconnected transmission system. Because the 46 kV substation is part of Consumers Energy's distribution substation, that substation is the point at which project output is delivered to the interconnected transmission/distribution system. Thus, the lines proposed for removal from the license do not qualify as "primary transmission lines" necessary to move project output to the regional grid. Accordingly, Consumers Energy proposes to redefine the primary transmission line as the two circuits running from the powerhouse to the non-

project 46 kV distribution substation.

Consumers Energy's proposed amendments to the Cooke Project license are specified in the following Attachments:

Cooke Project No. 2453 Attachments	
Attachment 15	Redline showing proposed amendments to the Project Description in the license issued July 15, 1994, as amended on August 29, 2001.
Attachment 16	Redline showing proposed amendments to Exhibit A
Attachment 17	Clean version of amended Exhibit A
Attachment 18 (CUI/CEII)	Illustrative markup of Exhibit F-2 identifying drawing elements proposed for removal from that exhibit. Exhibit F-2 currently identifies the 46 kV and 4.8 kV (denoted as excluded from the license) substations. Consumers Energy proposes to remove both substations and associated circuits from Exhibit F-2 consistent with the proposed amendments to Exhibit A.

F. Five Channels Project No. 2453 – Proposed Non-Capacity Amendment

For the Five Channels Project, Consumers Energy first proposes a limited amendment to remove local distribution infrastructure from the license. The license currently identifies a 2.4-46 kV distribution substation adjacent to the powerhouse as a project work. However, this equipment is part of Consumers Energy's local distribution system that serves non-project distribution and load serving functions. Thus, the substation is not "used and useful" for Confluence Hydro's project operations.

Accordingly, Consumers Energy proposes to remove the 2.4-46 kV substation from the project description as stated in the Commission's prior ordering paragraphs, Exhibit A, and Exhibit F-2 of the Five Channels Project license.

Second, Consumers Energy proposes to amend the project description from ordering paragraphs of the Commission's prior relicensing order, Exhibit A, and Exhibit F-2 to redefine the primary transmission line. The primary transmission line is currently

described as the 46 kV lines running from Consumers Energy's 2.4-46 kV distribution substation to an interconnection with other components of Consumers Energy's interconnected local distribution system. Because the 2.4-46 kV substation is part of Consumers Energy's distribution system, that substation is the point at which project output is delivered to the interconnected transmission/distribution system. Thus, these lines proposed for removal from the license do not qualify as "primary transmission lines" necessary to move project output to the regional grid.

Accordingly, Consumers Energy proposes to define the licensed primary transmission line as the circuits and other infrastructure that deliver project output from the generators to Consumers Energy's 2.4-46 kV distribution substation. Consumers Energy also proposes to remove the depiction of the non-project lines leaving the 2.4-46 non-distribution substation and exiting circuits from Exhibit F-2.

Consumers Energy's proposed amendments to the Five Channels Project license are specified in the following Attachments:

Five Channels Project No. 2453 Attachments	
Attachment 19	Redline showing proposed amendments to the Project Description in the license issued on issued July 15, 1994.
Attachment 20	Redline showing proposed amendments to Exhibit A
Attachment 21	Clean version of amended Exhibit A
Attachment 22 (CUI/CEII)	Illustrative markup of Exhibit F-2 identifying drawing elements proposed for removal from that exhibit. Exhibit F-2 currently identifies the 2.4-46 kV distribution substation as excluded from the license. Consumers Energy proposes to remove the 2.4-46 kV distribution substation from Exhibit F-2 consistent with the proposed amendments to Exhibit A.

G. Webber Project No. 2559 – Proposed Non-Capacity Amendment

For the Webber Project, Consumers Energy proposes limited, non-substantive amendments to Exhibit F-1 to reconcile it with the description of project works in Exhibit

A. Exhibit A indicates that the 46 kV substation is excluded from the license. Exhibit F-1, however, depicts the excluded 46 kV substation, but does not include an annotation that the substation is excluded from the license.

Accordingly, to avoid confusion, Consumers Energy proposes a non-substantive amendment to Exhibit F-1 to clarify that the 46 kV non-project substation is not a licensed project work.

Consumers Energy's proposed amendments to the Webber Project license are specified in the following Attachment:

Webber Project No. 2559 Attachments	
Attachment 23 (CUI/CEII)	Illustrative markup of Exhibit F-1 identifying the non-project 46 kV distribution substation that requires clarification as non-licensed infrastructure.

H. Hodenpyl Project No. 2599 – Proposed Non-Capacity Amendment

For the Hodenpyl Project, Consumers Energy proposes limited, non-substantive amendments to Exhibit F-2 to reconcile it with description of project works in Exhibit A. Exhibit A does not identify or describe any distribution infrastructure that should not be included as licensed project works. Exhibit F-2, however, depicts Consumers Energy's non-project substation, lines, and related infrastructure, but the exhibit does not indicate those are non-project works.

Accordingly, Consumers Energy proposes non-substantive amendments to Exhibit F-2 to clarify that the distribution infrastructure is not a licensed project work.

Consumers Energy's proposed amendments to the Hodenpyl Project license are specified in the following Attachment:

Hodenpyl Project No. 2559 Attachments	
Attachment 24 (CUI/CEII)	Illustrative markup of Exhibit F-2 identifying Consumers Energy's non-project distribution infrastructure that requires clarification as non-licensed infrastructure.

IV. REQUEST FOR NON-PROJECT USE OF PROJECT LANDS

Pursuant to Standard Article 5 of the licenses for the Projects, Consumers Energy respectfully requests Commission approval for the non-project use of project lands concerning Consumers Energy's existing distribution infrastructure located within each Project's boundary. As described herein, following transfer of the Project's licenses and conveyance of the Projects to the Confluence Hydro subsidiaries, Consumers Energy will continue to own and exclusively operate certain distribution infrastructure. Thus, this request for authorization for non-project use of project lands seeks the Commission's approval for:

1. The continued occupancy of Consumers Energy's existing non-project distribution infrastructure (*e.g.*, distribution substations) within the Projects' boundaries, including the infrastructure proposed for removal from certain licenses via the amendments to the Projects' licenses described above; and
2. Consumers Energy's continued access to these lands for purposes of operation and maintenance of its existing distribution infrastructure within the Projects' boundaries, including the infrastructure proposed for removal from certain licenses via the amendments to the Projects' licenses described above.

The proposed non-project use of project lands will be consistent with Consumers Energy's status quo utility practices conducted on project lands for decades. Consumers Energy does not propose any new or changed project operations, the construction or alteration of project works, or other ground disturbing activities as part of this request for

non-project use of project lands. It simply requests Commission approval for the continued existence of these facilities and Consumers Energy's continued access for operation and maintenance purposes, once it is no longer the licensee.

By granting this request, the Commission will enable Consumers Energy to continue utilizing existing distribution infrastructure to support its service commitments without conflicting with the regulatory requirements of the licensed Projects post-license transfer. This approval will also ensure operational continuity and efficiency, aligning with both regulatory standards and Consumers Energy's dedication to providing safe and reliable electric service to its regional customers.

A. Existing Non-Project Infrastructure Within the Projects' Boundaries

The existing non-project infrastructure located within the Projects' boundaries consists of high-voltage distribution lines, primary overhead low-voltage distribution lines, primary underground distribution lines, secondary overhead distribution lines, secondary underground distribution lines, distribution substations, and associated facilities. Attachment 28 includes a map for each Project showing the location of Consumers Energy's non-project distribution facilities within each project boundary.

In all cases, Consumers Energy's existing distribution equipment has been in place for decades. Following transfer of the Projects' licenses and conveyance of the Projects to the Confluence Hydro subsidiaries, Consumers Energy will be exclusively responsible for maintaining and operating this non-project distribution infrastructure as part of its integrated regional grid.

B. Proposed Non-Project Access Rights and Activities

Pursuant to the terms of the PSA, Consumers Energy will retain access for continued operation and maintenance of its non-project distribution infrastructure located

within the Projects' boundaries consistent with historic and prudent utility practices via reserved easements conveyed through a quitclaim deed and temporary substation easements, as described in the PSA. The Form of Quitclaim Deed (Attachment 26) establishes broad rights for Consumers Energy to access its distribution equipment and includes the following *Linweave* clause[62] such that the licensee will retain sufficient rights for purposes of carrying out license requirements:

> Notwithstanding any other provision contained herein, in connection with the easements and rights reserved by Grantor herein, Grantee, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. _____, Federal Energy Regulatory Commission ("Commission") orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantor.[63]

The Form of Temporary Substation Easement Agreement (Attachment 27), includes the following *Linweave* clause:

> Notwithstanding any other provision contained herein, Grantor, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. [_____], Commission orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantee.[64]

1. Low Voltage Distribution Lines

As set forth in the Form of Quitclaim Deed granting Consumers Energy continued access to the project lands, Consumers Energy will continue to access the Projects' lands as necessary to maintain and operate its existing low voltage distribution (0-46kV) assets. Operation and maintenance of these assets will include continued access to maintain,

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62 *Linweave, Inc.*, 23 FERC ¶ 61,391 (1983).

63 *See* Attachment 26.

64 *See* Attachment 27.

inspect (including aerial patrol), survey, replace, reconstruct, improve, remove, relocate, change the size of, enlarge, and protect a line or lines of electric facilities. As needed, Consumers Energy will also access project lands to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation that is or may impact Consumers Energy's distribution assets.

This may include access necessary to maintain, inspect, construct, or reconstruct any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade.

Consumers Energy's access to its existing distribution facilities will include an easement over, under, across, and through a 40-foot-wide strip of land, with an additional 10-feet of either side of the 40-foot-wide strip for temporary workspace.[65]

2. High Voltage Distribution Lines

As set forth in the Form of Quitclaim Deed, Consumers Energy will continue to access the project lands as necessary to maintain and operate its high voltage distribution (46-138kV) assets. Operation and maintenance of these assets will include continued access to maintain, inspect (including aerial patrol), survey, replace, reconstruct, improve, remove, relocate, change the size of, enlarge, and protect a line or lines of electric facilities. This may include access necessary to maintain, inspect, construct, or reconstruct any pole structures, poles, or any combination of same, wires, cables,

[65] *See* Attachment 25.

conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade. As needed, Consumers Energy will also access these project lands to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation that is or may impact Consumers Energy's distribution assets.

Consumers Energy's access to its distribution facilities will include an easement over, under, across, and through an 80-foot-wide strip of land, with an additional 10-feet of either side of the 80-foot-wide strip for temporary workspace.[66]

3. Substations

As set forth in the Form of Temporary Substation Easement Agreement and in the Form of Quitclaim Deed, Consumers Energy will continue to access the project lands as necessary to maintain and operate its electric transmission and distribution substations. Operation and maintenance of these assets will include continued access to maintain, inspect (including aerial patrol), survey, replace, reconstruct, improve, remove, relocate, change the size of, enlarge, and protect the substation and any connected switching stations, transformers, lines, poles or other structures supporting the substations. As needed, Consumers Energy will also access these project lands to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation located within 80 feet of the fenced area containing substation assets that is or may impact Consumers Energy's distribution assets.

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[66] *See* Attachment 25.

Consumers Energy's access to the substation and related assets will include the fenced area surrounding the substation as well as a 20-foot area outside of the fence allowing for temporary works space, grounding pads, switch poles, etc. and screening which may include vegetation, and driveway (ingress/egress) 20-feet in width.

The maps identifying Consumers Energy's distribution infrastructure (Attachment 28) indicate the location of existing substations in a yellow polygon. For the Foote, Webber, Five Channels, and Hodenpyl Projects, the maps also identify a "reserved easement" in a blue polygon. The PSA contemplates that existing substations at those projects will need to be relocated post-transfer consistent with applicable standards, rules, and/or regulations. To facilitate that future, post-transfer relocation, the applicable quitclaim deeds include reserved easements where the substations will most likely be relocated to. At this time, the specific plans, timing, and ultimate locations for relocating substations at the Foote, Hodenpyl, Webber, and Five Channels are under development. This Application does not seek authorization for any ground disturbing activities, including the post-transfer relocation of the Foote, Webber, Five Channels, and Hodenpyl substations. The reserved easements simply identify the most likely locations where those substations will be relocated after transfer to Confluence Hydro. Separate authorizations for the post-transfer substation relocations will be sought from the Commission, as appropriate.

V. PRE-FILING CONSULTATION

This Application involves only ministerial, administrative amendments and authorizations under Consumers Energy's licenses for the Projects. This Application involves no changes to operation and maintenance of the Projects, nor does it seek approval of any ground disturbing activities. For these reasons, this Application does not

"affect the interests of" any resource agency or Indian tribe listed in section 4.38(a)(1) of the Commission's regulations.[67] Accordingly, the Commission's regulations require no prefiling consultation for this Application.[68]

VI. REQUEST FOR PRIVILEGED TREATMENT

In accordance with FERC's regulations governing Critical Energy Infrastructure Information (CEII),[69] information included in this Application contains CEII and is being filed in a separate attachment for inclusion in FERC's non-public file. The attached Exhibit F design drawings and project overview maps include sensitive and detailed engineering information detailing the critical distribution infrastructure at the Projects that, if used incorrectly, may compromise the safety of the Projects and those responsible for its proper operation. As such, Consumers Energy respectfully requests, in accordance with section 388.113(d) of the Commission's regulations,[70] that FERC maintain this information in its non-public file as CEII.[71] Each page of these attachments has been marked as "CUI//CEII."

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67 18 C.F.R. § 4.38(a)(1).

68 *Id.* § 4.38(a)(7).

69 18 C.F.R. § 388.113.

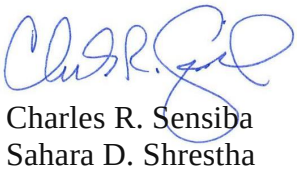
70 *Id.* § 388.113(d)(1)(i).

71 *Id.* § 388.113(d)(1)(ii).

VII. CONCLUSION

WHEREFORE, for the reasons described above, Consumers Energy submits that this Application is in the public interest and requests the Commission to approve it as specified in Attachment 1.

Respectfully submitted,



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DATED: October 31, 2025

Table of Attachments

Attachment Name	Description
1	Proposed Ordering Paragraphs
2	Foote Hydroelectric Project No. 2436 License Ordering Paragraph (B)(2) (Redline)
3	Foote Hydroelectric Project No. 2436 Exhibit A (Redline)
4	Foote Hydroelectric Project No. 2436 Exhibit A (Clean)
5	Foote Hydroelectric Project No. 2436 Exhibit F (Markup) – CUI//CEII
6	Alcona Hydroelectric Project No. 2447 Exhibit A (Redline)
7	Alcona Hydroelectric Project No. 2447 Exhibit A (Clean)
8	Alcona Hydroelectric Project No. 2447 Exhibit F (Markup) – CUI//CEII
9	Mio Hydroelectric Project No. 2448 Exhibit A (Redline)
10	Mio Hydroelectric Project No. 2448 Exhibit A (Clean)
11	Mio Hydroelectric Project No. 2448 Exhibit F (Markup) – CUI//CEII
12	Loud Hydroelectric Project No. 2449 Exhibit A (Redline)
13	Loud Hydroelectric Project No. 2449 Exhibit A (Clean)
14	Loud Hydroelectric Project No. 2449 Exhibit F (Markup) – CUI//CEII
15	Cooke Hydroelectric Project No. 2450

Attachment Name	Description
	License Ordering Paragraph (B)(2) (Redline)
16	Cooke Hydroelectric Project No. 2450 Exhibit A (Redline)
17	Cooke Hydroelectric Project No. 2450 Exhibit A (Clean)
18	Cooke Hydroelectric Project No. 2450 Exhibit F (Markup) – CUI//CEII
19	Five Channels Hydroelectric Project No. 2453 License Ordering Paragraph (B)(2) (Redline)
20	Five Channels Hydroelectric Project No. 2453 Exhibit A (Redline)
21	Five Channels Hydroelectric Project No. 2453 Exhibit A (Clean)
22	Five Channels Hydroelectric Project No. 2453 Exhibit F (Markup) – CUI//CEII
23	Webber Hydroelectric Project No. 2566 Exhibit F (Markup) – CUI//CEII
24	Hodenpyl Hydroelectric Project No. 2566 Exhibit F (Markup) – CUI//CEII
25	Reserved Easement
26	Form of Temporary Substation Easement
27	Form of Quitclaim Deed
28	Non-Project Use of Project Lands Overview Maps – CUI//CEII
29	Subscription and Verification

ATTACHMENT 1

Proposed Ordering Paragraphs

Proposed Ordering Paragraphs

The Director orders:

(A) Consumers Energy's Application for Non-Capacity Related Amendments of Licenses and Request for Non-Project Use of Project Lands, filed October 31, 2025, is approved, as provided in Ordering Paragraphs A through EE.

For the Calkins Bridge Hydroelectric Project No. 785:

(B) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Calkins Bridge Hydroelectric Project (FERC Project No. 785) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Foote Hydroelectric Project No. 2436:

(C) The Project Description in Ordering Paragraph (B)(2) of the Order Issuing New License, issued July 15, 1994, as amended on July 29, 2025, is revised to read as follows:

Project works consisting of: (a) An approximately 4,100-foot-long main dam that consists of a 700-foot-long by 50-foot-high left earth embankment and a 3,400-foot-long by 50-feet-high right earth embankment; (b) An approximately 93-foot-long by 60-foot-high concrete slab spillway constructed of reinforced concrete with a concrete spillway apron and a lined discharge channel that extends approximately 210 feet downstream from the spillway with a 12-foot-high concrete weir approximately 65 feet downstream from the spillway; (c) An existing impoundment with a normal maximum surface area of approximately 1,800 acres at a normal maximum surface elevation of 639.3 feet National Geodetic Vertical Datum of 1929, a gross capacity of 32,660 acre-feet, and a normal usable storage capacity of approximately 2,180 acre-feet; (d) A steel frame, reinforced concrete and masonry powerhouse with three generating units with a authorized installed capacity of 7,229 kilowatts; (e) transmission facilities; and (f) appurtenant facilities.

(D) Consumers Energy's application filed on October 31, 2025, for the Foote Hydroelectric Project (FERC Project No. 2436), requesting to amend the approved Exhibit A, is approved and made part of the license, superseding the previous Exhibit A.

(E) Consumers Energy's application filed on October 31, 2025, for the Foote Hydroelectric Project (FERC Project No. 2436), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(F) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Foote Hydroelectric Project (FERC Project No. 2436) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Alcona Hydroelectric Project No. 2447:

(G) Consumers Energy's application filed on October 31, 2025, for the Alcona Hydroelectric Project (FERC Project No. 2447), requesting to amend the approved Exhibit A, is approved and made part of the license, superseding the previous Exhibit A.

(H) Consumers Energy's application filed on October 31, 2025, for the Alcona Hydroelectric Project (FERC Project No. 2447), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(I) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Alcona Hydroelectric Project (FERC Project No. 2447) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Mio Hydroelectric Project No. 2448:

(J) Consumers Energy's application filed on October 31, 2025, for the Mio Hydroelectric Project (FERC Project No. 2448), requesting to amend the approved Exhibit A, is approved and made part of the license, superseding the previous Exhibit A.

(K) Consumers Energy's application filed on October 31, 2025, for the Mio Hydroelectric Project (FERC Project No. 2448), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(L) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Mio Hydroelectric Project (FERC Project No. 2448) is approved: (1) the continued occupation of existing non-project

distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Loud Hydroelectric Project No. 2449:

(M) Consumers Energy's application filed on October 31, 2025, for the Loud Hydroelectric Project (FERC Project No. 2449), requesting to amend the approved Exhibit A, is approved and made part of the license, superseding the previous Exhibit A.

(N) Consumers Energy's application filed on October 31, 2025, for the Loud Hydroelectric Project (FERC Project No. 2449), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(O) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Loud Hydroelectric Project (FERC Project No. 2449) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Cooke Hydroelectric Project No. 2450:

(P) The Project Description in Ordering Paragraph B(2) of the Order Issuing New License, issued July 15, 1994, as amended in August 29, 2001, is revised to read as follows:

Project works consisting of: (a) two existing earth embankment dam sections, one 60 feet high to the north, and one 60 feet high to the south; (b) a 60-foot-high concrete slab spillway with a concrete spillway apron and a 12-foot-high concrete weir located 70 feet downstream from the spillway gates; (c) an existing impoundment with a normal maximum surface area of 1,627 acres at a surface level of 679.0 feet U.S. Geological Survey datum with gross storage of 26,749 acre-feet and normal usable storage of 1,743 acre-feet; (d) a powerhouse containing three generators with a total rated capacity of 9,000 kW and three turbines with a total best gate capacity of 6,609 kW; (e) transmission facilities; and, (f) appurtenant facilities.

(Q) Consumers Energy's application filed on October 31, 2025, for the Cooke Hydroelectric Project (FERC Project No. 2450), requesting to amend the approved Exhibit A, is approved and made part of the license, superseding the previous Exhibit A.

(R) Consumers Energy's application filed on October 31, 2025, for the Cooke Hydroelectric Project (FERC Project No. 2450), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission

approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(S) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Cooke Hydroelectric Project (FERC Project No. 2450) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Rogers Hydroelectric Project No. 2451:

(T) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Rogers Hydroelectric Project (FERC Project No. 2451) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Hardy Hydroelectric Project No. 2452:

(U) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Hardy Hydroelectric Project (FERC Project No. 2452) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Five Channels Hydroelectric Project No. 2453:

(V) The Project Description in Ordering Paragraph B(2) of the Order Issuing New License, issued July 15, 1994 is revised to read as follows:

Project works consisting of: (a) two existing earth embankment dam sections, one 45 feet high to the north, and one 45 feet high to the south; (b) a 60-foot-high concrete slab spillway with a concrete spillway apron and an 8-foot-high concrete weir located 60 feet downstream from the spillway gates; (c) an existing impoundment with a normal maximum surface area of 212 acres at a surface level of 715.0 feet U.S. Geological Survey datum with gross storage of 3,419 acre-feet and normal usable storage of 124 acre-feet; (d) a powerhouse containing two generating units with a total rated capacity of 6,000 kW; (e) transmission facilities; and, (f) appurtenant facilities.

(W) Consumers Energy's application filed on October 31, 2025, for the Five Channels Hydroelectric Project (FERC Project No. 2453), requesting to amend the approved Exhibit A, is

approved and made part of the license, superseding the previous Exhibit A.

(X) Consumers Energy's application filed on October 31, 2025, for the Five Channels Hydroelectric Project (FERC Project No. 2453), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

Y) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Five Channels Hydroelectric Project (FERC Project No. 2453) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Croton Hydroelectric Project No. 2468:

(Z) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Croton Hydroelectric Project (FERC Project No. 2468) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Webber Hydroelectric Project No. 2566:

(AA) Consumers Energy's application filed on October 31, 2025, for the Webber Hydroelectric Project (FERC Project No. 2566), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(BB) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Webber Hydroelectric Project (FERC Project No. 2566) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Tippy Hydroelectric Project 2580:

(CC) Consumers Energy's application filed on October 31, 2025, requesting

authorization of the following non-project use of project lands at the Tippy Hydroelectric Project (FERC Project No. 2580) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

For the Hodenpyl Hydroelectric Project No. 2599:

(DD) Consumers Energy's application filed on October 31, 2025, for the Hodenpyl Hydroelectric Project (FERC Project No. 2599), requesting to amend the approved Exhibit F-2 drawing, is approved. Within 90 days of this order, the licensee shall file for Commission approval a revised Exhibit F-2 drawing to implement the approved changes. A courtesy copy shall be filed with the Commission's Division of Dam Safety and Inspections (D2SI)—Chicago Regional Engineer; the Director, D2SI; and the Director, Division of Hydropower Administration and Compliance.

(EE) Consumers Energy's application filed on October 31, 2025, requesting authorization of the following non-project use of project lands at the Hodenpyl Hydroelectric Project (FERC Project No. 2599) is approved: (1) the continued occupation of existing non-project distribution infrastructure located within the project boundary; and (2) Consumers Energy's access to project lands for purposes of continued operation and maintenance of existing distribution infrastructure.

ATTACHMENT 2

Foote Hydroelectric Project No. 2436
License Ordering Paragraph (B)(2) (Redline)

(2) Project works consisting of: (a) An approximately 4,100-foot-long main dam that consists of a 700-foot-long by 50-foot-high left earth embankment and a 3,400-foot-long by 50-feet-high right earth embankment; (b) An approximately 93-foot-long by 60-foot-high concrete slab spillway constructed of reinforced concrete with a concrete spillway apron and a lined discharge channel that extends approximately 210 feet downstream from the spillway with a 12-foot-high concrete weir approximately 65 feet downstream from the spillway; (c) An existing impoundment with a normal maximum surface area of approximately 1,800 acres at a normal maximum surface elevation of 639.3 feet National Geodetic Vertical Datum of 1929, a gross capacity of 32,660 acre-feet, and a normal usable storage capacity of approximately 2,180 acre-feet; (d) A steel frame, reinforced concrete and masonry powerhouse with three generating units with a authorized installed capacity of 7,229 kilowatts; ~~(e) A substation adjoining the powerhouse~~; (e~~f~~) ~~A 600-foot-long, 46 kilovolt~~ transmission facilities ~~line running from the substation to the licensee's interconnected primary transmission system~~; and (f~~g~~) appurtenant facilities.

ATTACHMENT 3

Foote Hydroelectric Project No. 2436
Exhibit A (Redline)

FOOTE HYDROELECTRIC PROJECT
(FERC NO. 2436)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised ~~February~~ October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCKS 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 4
A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 5
A.6 UNITED STATES LANDS 5

FOOTE PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Foote Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of this application for new license.

A.1.1 DAM

The main dam consists of earth embankments constructed of hydraulically placed fill with a concrete core wall on the upstream side along all but the far-left end of the left embankment and along about 82 feet of the right embankment.

The main dam is approximately 4,100 feet in length consisting of two sections of earth embankment (a 700 foot long left earth embankment and a 3,400 foot long right earth embankment)., a powerhouse block, and a spillway section. The earth embankment sections are founded on steel sheet piling cutoff. The powerhouse and spillway sections occupy approximately 196 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately 93 feet in length and is constructed of reinforced concrete. It contains three steel tainter gate (normally closed), 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates with a 12 foot high concrete weir approximately 65 feet downstream of the tainter gates. Where the right

embankment terminates there is 1,300 foot long low area that serves as an emergency spillway. A stationary propane generator is available to provide emergency power to Spillgate No.1.

A.1.3 POWERHOUSE/PENSTOCKS

A steel frame, reinforced concrete and masonry powerhouse occupies approximately 103 feet of the dam, and houses three 3,000 KW generating units. Each unit is located in a penstock with a steel tainter gate.

A.1.4 TAILRACE

A tailrace extends approximately 165 feet downstream from the powerhouse with a concrete weir at the downstream end. The top of the weir is 6.5 feet above the bottom of the draft tube at the powerhouse. The sides of the tailrace are constructed of reinforced concrete over the entire length while the bottom is reinforced concrete for approximately the first 25 feet and granular soil and rock for the remainder of the tailrace.

A.1.5 SUBSTATION

None.

~~The substation adjoins the powerhouse on the south bank of the river and contains two 3-phase, 5,000 KVA, 4.8-46 KV transformers with necessary switching equipment and protective devices. The substation also contains one distribution circuit connection supplied by a transformer bank consisting of two, 250 kVA and one 333 kVA, 4.8 kV to 4.8/8.32 kV single-phase transformers. This distribution circuit is not included in the license.~~

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,703 acres at a normal maximum surface elevation of 639.3 feet (NGVD29). The gross capacity of the Foote reservoir is 32,660 acre-feet.

The normal usable storage capacity, that under normal operating conditions (1.35 foot impoundment fluctuations), is approximately 2,180 acre-feet.

FERC Order dated June 21, 2011 approving the results of the Three Year Manual Operations Test Plan results also approved an amendment to License Articles 403 providing for the Foote impoundment surface water elevation be maintained at 639.2 ft,- 1.25 feet and + 0.1 feet. The order also provided for the use of the automatic control system.

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the three generating units is composed of one Allis-Chalmers Type 15, 90 RPM, 4,250 horsepower at 35 foot head, 100 inch diameter Francis type hydraulic turbine direct-connected to an General Electric, vertical, 90 RPM, 5.0 kV, 3,333kVA, 0.90 PF, 3 phase generator, with a General Electric 58 KW direct connected exciter. The turbine gates on each unit are controlled by an Allis-Chalmers #3 oil pressure governor.

FERC Order dated January 26, 2001, amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Foote Project		
Unit #1	2,587	3,000
Unit #2	2,328	3,000

Unit #3	2,314	3,000
Total	**7,229**	**9,000**

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line is the approximately 25-foot long connector from the generator output to an interconnection with the local distribution system at a non-project 46 kV distribution substation.

~~The 46 KV line transmission line, approximately 600 feet in length, from the substation to the Licensee's interconnected primary transmission system is included in the Foote project license.~~

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A powerhouse crane of 25 ton capacity with electrically driven hoist with manal bridge travel manufactured by the Whiting Foundry Equipment Company

A.5.2 HOISTS

The penstock tainter gates are controlled by three fixed electrically driven hoists. Three electric motor driven hoists are used to control the three spillway tainter gates. During scheduled or unscheduled project shutdowns, the controls on one of these hoists will automatically open on of the gates enough to assure adequate tailwater flow (minimum flow) for the continued protection of downstream biological communities as further described in Exhibits B and E of the application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the three generators is connected through oil circuit breakers to a 4,800 volt bus. Station power is supplied from this bus by one 25 KVA, 4,800-240/120 volt transformer~~s~~.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G of this application are:

	Location/Description		Area (Acres)
	Oscoda Twp, Iosco County; T24N, R8E, SW1/4 of Sec 20; SE1/4 and SW1/4 of Sec 19; NW1/4 of Sec 29; NW1/4 of Sec 30.		108
	Oscoda Twp., Iosco County; T24N, R7E, SW1/4 of Sec. 13; S1/2 of SE1/4 of Sec 14; SW1/4 of Sec. 14; SE1/4 of Sec 15; NE1/4 of NE1/4 of Sec 22; N1/2 of NW1/4 of Sec. 23; NE1/4 of Sec. 23; Sec24; NE1/4 of NE1/4 of Sec. 25.		376
	Total Acreage		484

Commission order dated December 8, 1995 revised Article 201 of the Foote license eliminating the 484 acres of federal lands for the purpose of calculating the annual charges recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 4

Foote Hydroelectric Project No. 2436
Exhibit A (Clean)

FOOTE HYDROELECTRIC PROJECT
(FERC NO. 2436)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCKS 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 4
A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 5

FOOTE PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Foote Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of this application for new license.

A.1.1 DAM

The main dam consists of earth embankments constructed of hydraulically placed fill with a concrete core wall on the upstream side along all but the far-left end of the left embankment and along about 82 feet of the right embankment.

The main dam is approximately 4,100 feet in length consisting of two sections of earth embankment (a 700 foot long left earth embankment and a 3,400 foot long right earth embankment)., a powerhouse block, and a spillway section. The earth embankment sections are founded on steel sheet piling cutoff. The powerhouse and spillway sections occupy approximately 196 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately 93 feet in length and is constructed of reinforced concrete. It contains three steel tainter gate (normally closed), 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates with a 12 foot high concrete weir approximately 65 feet downstream of the tainter gates. Where the right

embankment terminates there is 1,300 foot long low area that serves as an emergency spillway. A stationary propane generator is available to provide emergency power to Spillgate No.1.

A.1.3 POWERHOUSE/PENSTOCKS

A steel frame, reinforced concrete and masonry powerhouse occupies approximately 103 feet of the dam, and houses three 3,000 KW generating units. Each unit is located in a penstock with a steel tainter gate.

A.1.4 TAILRACE

A tailrace extends approximately 165 feet downstream from the powerhouse with a concrete weir at the downstream end. The top of the weir is 6.5 feet above the bottom of the draft tube at the powerhouse. The sides of the tailrace are constructed of reinforced concrete over the entire length while the bottom is reinforced concrete for approximately the first 25 feet and granular soil and rock for the remainder of the tailrace.

A.1.5 SUBSTATION

None.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,703 acres at a normal maximum surface elevation of 639.3 feet (NGVD29). The gross capacity of the Foote reservoir is 32,660 acre-feet. The normal usable storage capacity, that under normal operating conditions (1.35 foot impoundment fluctuations), is approximately 2,180 acre-feet.

FERC Order dated June 21, 2011 approving the results of the Three Year Manual Operations Test Plan results also approved an amendment to License Articles 403 providing for the Foote

impoundment surface water elevation be maintained at 639.2 ft,- 1.25 feet and + 0.1 feet. The order also provided for the use of the automatic control system.

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the three generating units is composed of one Allis-Chalmers Type 15, 90 RPM, 4,250 horsepower at 35 foot head, 100 inch diameter Francis type hydraulic turbine direct-connected to an General Electric, vertical, 90 RPM, 5.0 kV, 3,333kVA, 0.90 PF, 3 phase generator, with a General Electric 58 KW direct connected exciter. The turbine gates on each unit are controlled by an Allis-Chalmers #3 oil pressure governor.

FERC Order dated January 26, 2001, amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Foote Project		
Unit #1	2,587	3,000
Unit #2	2,328	3,000
Unit #3	2,314	3,000
Total	**7,229**	**9,000**

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line is the approximately 25-foot long connector from the generator output to an interconnection with the local distribution system at a non-project 46 kV distribution substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A powerhouse crane of 25 ton capacity with electrically driven hoist with manal bridge travel manufactured by the Whiting Foundry Equipment Company

A.5.2 HOISTS

The penstock tainter gates are controlled by three fixed electrically driven hoists. Three electric motor driven hoists are used to control the three spillway tainter gates. During scheduled or unscheduled project shutdowns, the controls on one of these hoists will automatically open on of the gates enough to assure adequate tailwater flow (minimum flow) for the continued protection of downstream biological communities as further described in Exhibits B and E of the application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the three generators is connected through oil circuit breakers to a 4,800 volt bus. Station power is supplied from this bus by one 25 KVA, 4,800-240/120 volt transformers.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G of this application are:

	Location/Description		Area (Acres)
	Oscoda Twp, Iosco County; T24N, R8E, SW1/4 of Sec 20; SE1/4 and SW1/4 of Sec 19; NW1/4 of Sec 29; NW1/4 of Sec 30.		108
	Oscoda Twp., Iosco County; T24N, R7E, SW1/4 of Sec. 13; S1/2 of SE1/4 of Sec 14; SW1/4 of Sec. 14; SE1/4 of Sec 15; NE1/4 of NE1/4 of Sec 22; N1/2 of NW1/4 of Sec. 23; NE1/4 of Sec. 23; Sec24; NE1/4 of NE1/4 of Sec. 25.		376
	Total Acreage		484

Commission order dated December 8, 1995 revised Article 201 of the Foote license eliminating the 484 acres of federal lands for the purpose of calculating the annual charges recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 5

Foote Hydroelectric Project No. 2436
Exhibit F (Markup)

[CUI/CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 6

Alcona Hydroelectric Project No. 2447
Exhibit A (Redline)

ALCONA HYDROELECTRIC PROJECT
(FERC NO. 2447)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED July 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

DESCRIPTION OF PROJECT

Revised ~~February~~ October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 3
A.5 ADDITIONAL APPURTENANT EQUIPMENT 3
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.3 SPILL TUBE VALVES 4
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 4

ALCONA PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Alcona Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Alcona Project license.

A.1.1 DAM

The dam is approximately 4,700 feet in width consisting of, from left to right looking downstream: a 400 foot wide vegetative lined auxiliary spillway, 2,750 foot wide left earthen embankment, an 80 foot wide powerhouse, and a 1,470 foot wide right embankment. The left embankment includes a 300 foot concrete core wall and the right embankment includes a 1,500 foot concrete core wall. The right embankment concrete core wall is tied to a steel sheetpile cutoff wall adjacent to the powerhouse. The left embankment concrete core wall is tied to a 660 foot steel sheetpile cutoff wall adjacent to the powerhouse, 130 feet of wood pile cutoff wall and 1,710 feet of embankment without a core wall. In 2024, sheetpile was installed upstream of the entire core wall and backfilled with concrete.

A.1.2 SPILLWAY

The undersluice spillway system consists of six spill tubes (three for each unit). The spill tubes are conduits of varying dimensions from the penstock inlets to the draft tube and are an integral part of the concrete powerhouse substructure. Each spill tube contains a 78 inch diameter motor operated butterfly valve (normally closed) to control flow.

To augment the ordinary spilling capacity an auxiliary spillway of 400 feet in width is located at the east end of the embankment. This spillway is designed to provide additional spill capacity when the water surface in the reservoir is more than five feet above the normal surface elevation (829.0 ft (NGVD29)).

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 80 feet of the dam, and houses two 4,000 KW generating units and undersluice spillway system which discharge into the draft tubes. Each unit is located in a penstock with a steel Tainter gate controlling flow to both the turbine and the spill tubes.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 135 feet downstream from the powerhouse. The bottom of the tailrace has a four-foot vertical step up at approximately 55 feet downstream from the powerhouse.

A.1.5 SUBSTATION

None. ~~There is one 10MVA, 4.8-138 KV transformer located in the substation located downstream of the powerhouse.~~

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,006 acres at a normal surface elevation of 829.0 feet (NGVD29). The gross capacity of the Alcona reservoir is approximately12,547 acre- feet at the 829.0 feet surface water elevation.

In 2000 an automatic control system was installed at the Alcona Project providing for impoundment level control by adjusting turbine flows. FERC Order dated July 26, 2012 approved the results of the Three Year Manual Operations Test Plan results. The order also approved amendments to License Articles 401 and 403 providing for the Alcona impoundment surface water elevation be maintained at 829.0 ft +/- 0.25 feet (NGVD29). The order also provided for the use of the automatic control system.

During 2010, the auto-control system was changed to be in-sync with the new PLC control system at the downstream Foote Dam (FERC Project No. 2436).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license, are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two vertical generating units is composed of one Wellman-Seaver-Morgan, 90 RPM, 5,500 horsepower at 40 foot head, 100 inch diameter Francis type hydraulic turbine direct- connected to General Electric Company 90 RPM, 5.0 KV, 4,444 KVA, 0.9 PF, 3 phase generator, direct-connected to a 60 KW exciter. The turbine gates are controlled by Sorensen Model 2 APH gate operators.

A.4 PRIMARY TRANSMISSION LINE

A 4,8 KV circuit connection of 400 feet from the powerhouse to a 138 KV switching station is included in the license.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A 30 ton capacity crane services the powerhouse.

A.5.2 HOISTS

The Tainter gate hoists are located on the upstream deck and are driven by electric motors.

A.5.3 SPILL TUBE VALVES

The valves are operated by 230 vac motors powered from the station power bus. In the event of a loss of ac power a 50 kw auxiliary propane generator (installed in 2021) can provide power to the valve motors.

During scheduled or unscheduled project shutdowns, an automatic control system will fully open one of the spill tube valves to assure tailwater flow (minimum flow) necessary for the continued protection of downstream biological communities as further described in Exhibits B and E of the application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 4,800 volt bus. Station power is supplied from this bus by one 75 KVA, 4,800-120/240 volt transformer. Control voltage is supplied by a 60 cell 125 volt DC battery bank.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Curtis Twp. Alcona County; T25N, R5E, SE1/4, SW1/4 and NW1/4 of Sec. 14: SW1/4 of Sec. 11; NE1/4 and NW1/4 of Sec. 15; SE1/4 of Sec. 10; NE1/4 of Sec. 16; SE1/4 of Sec. 9; NW1/4 of Sec. 3; NE1/4 of Sec 4.		324
	Mitchell Twp., Alcona County; T26N, R5E, NE1/4, SE1/4 and NW1/4 of Sec 33		40
	Total Acreage		364

Commission order dated December 8, 1995 revised Article 201 of the Alcona license eliminating these 364 acres of federal lands for the purpose of calculating the annual charges recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 7

Alcona Hydroelectric Project No. 2447
Exhibit A (Clean)

ALCONA HYDROELECTRIC PROJECT
(FERC NO. 2447)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED July 15, 1994

AU SABLE RIVER – STATE OF

MICHIGAN EXHIBIT A

DESCRIPTION OF PROJECT

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 3
A.5 ADDITIONAL APPURTENANT EQUIPMENT 3
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.3 SPILL TUBE VALVES 4
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 4

ALCONA PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Alcona Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Alcona Project license.

A.1.1 DAM

The dam is approximately 4,700 feet in width consisting of, from left to right looking downstream: a 400 foot wide vegetative lined auxiliary spillway, 2,750 foot wide left earthen embankment, an 80 foot wide powerhouse, and a 1,470 foot wide right embankment. The left embankment includes a 300 foot concrete core wall and the right embankment includes a 1,500 foot concrete core wall. The right embankment concrete core wall is tied to a steel sheetpile cutoff wall adjacent to the powerhouse. The left embankment concrete core wall is tied to a 660 foot steel sheetpile cutoff wall adjacent to the powerhouse, 130 feet of wood pile cutoff wall and 1,710 feet of embankment without a core wall. In 2024, sheetpile was installed upstream of the entire core wall and backfilled with concrete.

A.1.2 SPILLWAY

The undersluice spillway system consists of six spill tubes (three for each unit). The spill tubes are conduits of varying dimensions from the penstock inlets to the draft tube and are an integral part of the concrete powerhouse substructure. Each spill tube contains a 78 inch diameter motor operated butterfly valve (normally closed) to control flow.

To augment the ordinary spilling capacity an auxiliary spillway of 400 feet in width is located at the east end of the embankment. This spillway is designed to provide additional spill capacity when the water surface in the reservoir is more than five feet above the normal surface elevation (829.0 ft (NGVD29)).

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 80 feet of the dam, and houses two 4,000 KW generating units and undersluice spillway system which discharge into the draft tubes. Each unit is located in a penstock with a steel Tainter gate controlling flow to both the turbine and the spill tubes.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 135 feet downstream from the powerhouse. The bottom of the tailrace has a four-foot vertical step up at approximately 55 feet downstream from the powerhouse.

A.1.5 SUBSTATION

None.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,006 acres at a normal surface elevation of 829.0 feet (NGVD29). The gross capacity of the Alcona reservoir is approximately12,547 acre-feet at the 829.0 feet surface water elevation.

In 2000 an automatic control system was installed at the Alcona Project providing for impoundment level control by adjusting turbine flows. FERC Order dated July 26, 2012 approved the results of the Three Year Manual Operations Test Plan results. The order also approved amendments to License Articles 401 and 403 providing for the Alcona impoundment surface water elevation be maintained at 829.0 ft +/- 0.25 feet (NGVD29). The order also provided for the use of the automatic control system.

During 2010, the auto-control system was changed to be in-sync with the new PLC control system at the downstream Foote Dam (FERC Project No. 2436).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license, are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two vertical generating units is composed of one Wellman-Seaver-Morgan, 90 RPM, 5,500 horsepower at 40 foot head, 100 inch diameter Francis type hydraulic turbine direct-connected to General Electric Company 90 RPM, 5.0 KV, 4,444 KVA, 0.9 PF, 3 phase generator, direct-connected to a 60 KW exciter. The turbine gates are controlled by Sorensen Model 2 APH gate operators.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line is an approximately 100-foot long, 4.8 kV line extending from the project powerhouse to an interconnection with the local distribution system at a non-project 138 kV distribution substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A 30 ton capacity crane services the powerhouse.

A.5.2 HOISTS

The Tainter gate hoists are located on the upstream deck and are driven by electric motors.

A.5.3 SPILL TUBE VALVES

The valves are operated by 230 vac motors powered from the station power bus. In the event of a loss of ac power a 50 kw auxiliary propane generator (installed in 2021) can provide power to the valve motors.

During scheduled or unscheduled project shutdowns, an automatic control system will fully open one of the spill tube valves to assure tailwater flow (minimum flow) necessary for the continued protection of downstream biological communities as further described in Exhibits B and E of the application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 4,800 volt bus. Station power is supplied from this bus by one 75 KVA, 4,800-120/240 volt transformer. Control voltage is supplied by a 60 cell 125 volt DC battery bank.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Curtis Twp. Alcona County; T25N, R5E, SE1/4, SW1/4 and NW1/4 of Sec. 14: SW1/4 of Sec. 11; NE1/4 and NW1/4 of Sec. 15; SE1/4 of Sec. 10; NE1/4 of Sec. 16; SE1/4 of Sec. 9; NW1/4 of Sec. 3; NE1/4 of Sec 4.		324
	Mitchell Twp., Alcona County; T26N, R5E, NE1/4, SE1/4 and NW1/4 of Sec 33		40
	Total Acreage		364

Commission order dated December 8, 1995 revised Article 201 of the Alcona license eliminating these 364 acres of federal lands for the purpose of calculating the annual charges recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 8

Alcona Hydroelectric Project No. 2447
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 9

Mio Hydroelectric Project No. 2448
Exhibit A (Redline)

MIO HYDROELECTRIC
PROJECT (FERC NO. 2448)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF
MICHIGAN EXHIBIT A
PROJECT DESCRIPTION

Revised ~~June 2024~~ October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 3
A.1.5 SUBSTATION 3

A.2 PROJECT IMPOUNDMENT 3

A.3 GENERATING EQUIPMENT. 4

A.4 PRIMARY TRANSMISSION LINE 4

A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 5
A.5.2 HOISTS 5
A.5.3 SPILLWAY VALVES 5
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 5

A.6 UNITED STATES LANDS 6

MIO PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Mio Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Mio project license.

A.1.1 DAM

The dam is approximately 2,020 feet in length consisting of, from left to right looking downstream: a 725 foot wide left embankment, the 100 foot wide powerhouse and spillway, a 195 foot right bank, a 476-foot-long middle embankment (immediately adjacent to the Tainter gate spillway), and a 529-foot-long auxiliary spillway (between the right and middle embankments), with a design head of 29 feet. The embankments are constructed of hydraulically placed sand with a concrete core wall with a mixture of wooden and steel sheet pile cutoff walls on the upstream side of the left embankment, middle embankment, and auxiliary spillway. At the right embankment, a steel sheet pile cutoff wall is present on the upstream side in lieu of a concrete core wall. A steel sheet pile repair overlay was placed on the upstream side of the core wall in 2009 and 2012 for the entire length of the embankments. The right embankment sheet pile was connected to sheet pile previously driven in 1988 (refer to section A.1.2). Concrete was placed between the sheet pile and the existing core wall.

A.1.2 SPILLWAY

The gated spillway is approximately 20 feet wide and is constructed of reinforced concrete. It contains one steel tainter gate (normally closed), 20 feet wide by 14.25 feet high.

In 1988 an emergency spillway approximately 529 feet in length was constructed in the south (or right) section of the earth embankment. It is constructed of reinforced concrete and has a crest elevation of 965.6 feet (NGVD29). During this construction project the concrete corewall was lowered over the length of the new emergency spillway, and raised 3 feet in all other locations. In addition, a concrete curb was constructed at the powerhouse and spillway structure to provide protection to elevation 969.67 feet (NGVD29), and approximately 240 feet of steel sheet piling was installed from the south end of the existing corewall to the existing south riverbank.

The undersluice spillway system consists of two spilltubes (one for each generator). The spilltubes are conduits of varying dimensions from the penstock inlets to the draft tube and are an integral part of the concrete powerhouse substructure. Each spill tube contains a 60 inch diameter motor operated gate valve (normally closed) to control flow.

Repairs in 2010 included new automatic controls such that either spill tube valve or the tainter gate could be programmed to open automatically to compensate for a loss of generation to maintain river flow downstream of the project until an Operator could respond to establish run-of-river project flows.

A stationary generator is available to provide emergency power to the spill gate. The spill tube valves are also provided with an auxiliary battery system for opening when ac power is not available.

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 65 feet of the dam, and houses two 2,480 KW generating units and undersluice spillways which discharge into the draft tubes. Each unit is located in a penstock with a steel tainter gate controlling flow to the turbine scroll case.

To improve Operator safety when clearing trash from the trash racks work platforms were installed across the inlet piers in 2000 and in 2018 a trash rack rake system was installed for trash removal.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 185 feet downstream from the powerhouse. The bottom of the tailrace has a four-foot vertical step up at approximately 80 feet downstream from the powerhouse.

In 2012 a concrete and sheet pile fisherman's platform was constructed along the downstream right abutment.

A.1.5 SUBSTATION

The substation adjoins the powerhouse on the north side and contains one bank of two 5,000 KVA, 2.4-138 KV transformers.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 661 acres at a normal surface elevation of 962.6 feet (NGVD29). The gross capacity of the Mio reservoir is 6,061 acre-feet.

In 2000 an automatic control system was installed at the Mio Project providing for impoundment level control by adjusting turbine flows. FERC Order dated July 26, 2012 approving the results of the Three Year Manual Operations Test Plan results also approved amendments to License Articles 401 and 403 providing for the Mio impoundment surface water elevation be maintained at 962.6 ft +/- 0.25 feet (NGVD29). The order also provided for the use of the automatic control system.

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement and were included in the project license, where elevations are referred to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two vertical generating units is composed of one Allis-Chalmers AV, 80 RPM, 3,500 horsepower at 27 foot head, 100 inch diameter Francis type hydraulic turbine set in a concrete scroll case over a concrete, steel-lined draft tube. Each turbine is direct-connected to an Allis- Chalmers 55 KW direct-connected exciter The turbine gates on each unit have an American Governor PLC controlled electric-hydraulic low oil volume, high pressure actuator governor.

FERC Order dated February 5, 2004 amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Mio Project		

Unit #1	2,009	2,457
Unit #2	1,876	2,457
Total	**3,885**	**4,914**

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line, approximately 400 feet in length, connects the 138 kV plant substation to an interconnection at the non-project 138 kV ITC/METC substation.

~~There are no primary transmission lines included in the Mio Project license.~~

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A 25 ton capacity crane services the powerhouse.

A.5.2 HOISTS

There are three stationary hoists: one for the spill gate and one for each of the two penstock head gates.

A.5.3 SPILLWAY VALVES

The two spill tube valves are controlled by electric motor driven valve operators. During scheduled or unscheduled project shutdowns, the automatic control system can be programmed to open one of the spill tube gate valves to assure tailwater flow (minimum flow) necessary for the continued protection of downstream biological communities as further described in Exhibits B and E of the Mio application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through a circuit breaker to a 2,400 volt bus. Station power is supplied from this bus by one 75 KVA, 2,400-120/240 volt transformer. Control voltage is supplied by a 125 volt battery with rectifier type charger.

Article 404 of the Mio license issued July 15, 1994 required the licensee to study, plan, design, and construct water quality enhancements (including temperature and dissolved oxygen enhancements). In 2009, a cool water upwelling system was designed and installed at Mio as a temperature enhancement measure. The system includes two underwater upwellers and valve manifold. Air is provided by an oil free air compressor. The upwelling system was designed to provide limited relief for downstream temperature sensitive species by "lifting" the cooler bottom waters of the reservoir into the withdrawal zones of the turbines.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)

	Mentor Twp. Oscoda County; T26N, R3E, NE1/4 and NW1/4 of Sec 7		17
	Big Creek Twp., Oscoda County; T26N, R2E, S1/2 of SW1/4 of Sec 2; SW1/4 and NW1/4 of Sec 11		137
	Big Creek Twp., Oscoda County; T26N, R2E, SE1/4, SW1/4 and NW1/4 of Sec 3; SE1/4 and SW1/4 of Sec 4; SE1/4 of Sec 5; NE1/4 and NW1/4 of Sec 10.		166
	Total Acreage		320

Commission order dated December 8, 1995 revised Article 201 of the Mio license eliminating these 320 acres of federal lands for the purpose of calculating the annual charges for recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 10

Mio Hydroelectric Project No. 2448
Exhibit A (Clean)

MIO HYDROELECTRIC
PROJECT (FERC NO. 2448)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN EXHIBIT A PROJECT DESCRIPTION

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 3
A.1.5 SUBSTATION 3
A.2 PROJECT IMPOUNDMENT 3
A.3 GENERATING EQUIPMENT. 4
A.4 PRIMARY TRANSMISSION LINE 4
A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 5
A.5.2 HOISTS 5
A.5.3 SPILLWAY VALVES 5
A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 5
A.6 UNITED STATES LANDS 6

MIO PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Mio Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Mio project license.

A.1.1 DAM

The dam is approximately 2,020 feet in length consisting of, from left to right looking downstream: a 725 foot wide left embankment, the 100 foot wide powerhouse and spillway, a 195 foot right bank, a 476-foot-long middle embankment (immediately adjacent to the Tainter gate spillway), and a 529-foot-long auxiliary spillway (between the right and middle embankments), with a design head of 29 feet. The embankments are constructed of hydraulically placed sand with a concrete core wall with a mixture of wooden and steel sheet pile cutoff walls on the upstream side of the left embankment, middle embankment, and auxiliary spillway. At the right embankment, a steel sheet pile cutoff wall is present on the upstream side in lieu of a concrete core wall. A steel sheet pile repair overlay was placed on the upstream side of the core wall in 2009 and 2012 for the entire length of the embankments. The right embankment sheet pile was connected to sheet pile previously driven in 1988 (refer to section A.1.2). Concrete was placed between the sheet pile and the existing core wall.

A.1.2 SPILLWAY

The gated spillway is approximately 20 feet wide and is constructed of reinforced concrete. It contains one steel tainter gate (normally closed), 20 feet wide by 14.25 feet high.

In 1988 an emergency spillway approximately 529 feet in length was constructed in the south (or right) section of the earth embankment. It is constructed of reinforced concrete and has a crest elevation of 965.6 feet (NGVD29). During this construction project the concrete corewall was lowered over the length of the new emergency spillway, and raised 3 feet in all other locations. In addition, a concrete curb was constructed at the powerhouse and spillway structure to provide protection to elevation 969.67 feet (NGVD29), and approximately 240 feet of steel sheet piling was installed from the south end of the existing corewall to the existing south riverbank.

The undersluice spillway system consists of two spilltubes (one for each generator). The spilltubes are conduits of varying dimensions from the penstock inlets to the draft tube and are an integral part of the concrete powerhouse substructure. Each spill tube contains a 60 inch diameter motor operated gate valve (normally closed) to control flow.

Repairs in 2010 included new automatic controls such that either spill tube valve or the tainter gate could be programmed to open automatically to compensate for a loss of generation to maintain river flow downstream of the project until an Operator could respond to establish run-of-river project flows.

A stationary generator is available to provide emergency power to the spill gate. The spill tube valves are also provided with an auxiliary battery system for opening when ac power is not available.

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 65 feet of the dam, and houses two 2,480 KW generating units and undersluice spillways which discharge into the draft tubes. Each unit is located in a penstock with a steel tainter gate controlling flow to the turbine scroll case.

To improve Operator safety when clearing trash from the trash racks work platforms were installed across the inlet piers in 2000 and in 2018 a trash rack rake system was installed for trash removal.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 185 feet downstream from the powerhouse. The bottom of the tailrace has a four-foot vertical step up at approximately 80 feet downstream from the powerhouse.

In 2012 a concrete and sheet pile fisherman's platform was constructed along the downstream right abutment.

A.1.5 SUBSTATION

The substation adjoins the powerhouse on the north side and contains one bank of two 5,000 KVA, 2.4-138 KV transformers.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 661 acres at a normal surface elevation of 962.6 feet (NGVD29). The gross capacity of the Mio reservoir is 6,061 acre-feet.

In 2000 an automatic control system was installed at the Mio Project providing for impoundment level control by adjusting turbine flows. FERC Order dated July 26, 2012 approving the results of the Three Year Manual Operations Test Plan results also approved amendments to License Articles 401 and 403 providing for the Mio impoundment surface water elevation be maintained at 962.6 ft +/- 0.25 feet (NGVD29). The order also provided for the use of the automatic control system.

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement and were included in the project license, where elevations are referred to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two vertical generating units is composed of one Allis-Chalmers AV, 80 RPM, 3,500 horsepower at 27 foot head, 100 inch diameter Francis type hydraulic turbine set in a concrete scroll case over a concrete, steel-lined draft tube. Each turbine is direct-connected to an Allis- Chalmers 55 KW direct-connected exciter The turbine gates on each unit have an American Governor PLC controlled electric-hydraulic low oil volume, high pressure actuator governor.

FERC Order dated February 5, 2004 amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Mio Project		

Unit #1	2,009	2,457
Unit #2	1,876	2,457
Total	**3,885**	**4,914**

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line, approximately 400 feet in length, connects the 138 kV plant substation to an interconnection at the non-project 138 kV ITC/METC substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A 25 ton capacity crane services the powerhouse.

A.5.2 HOISTS

There are three stationary hoists: one for the spill gate and one for each of the two penstock head gates.

A.5.3 SPILLWAY VALVES

The two spill tube valves are controlled by electric motor driven valve operators. During scheduled or unscheduled project shutdowns, the automatic control system can be programmed to open one of the spill tube gate valves to assure tailwater flow (minimum flow) necessary for the continued protection of downstream biological communities as further described in Exhibits B and E of the Mio application for new license.

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through a circuit breaker to a 2,400 volt bus. Station power is supplied from this bus by one 75 KVA, 2,400-120/240 volt transformer. Control voltage is supplied by a 125 volt battery with rectifier type charger.

Article 404 of the Mio license issued July 15, 1994 required the licensee to study, plan, design, and construct water quality enhancements (including temperature and dissolved oxygen enhancements). In 2009, a cool water upwelling system was designed and installed at Mio as a temperature enhancement measure. The system includes two underwater upwellers and valve manifold. Air is provided by an oil free air compressor. The upwelling system was designed to provide limited relief for downstream temperature sensitive species by "lifting" the cooler bottom waters of the reservoir into the withdrawal zones of the turbines.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)

	Mentor Twp. Oscoda County; T26N, R3E, NE1/4 and NW1/4 of Sec 7		17
	Big Creek Twp., Oscoda County; T26N, R2E, S1/2 of SW1/4 of Sec 2; SW1/4 and NW1/4 of Sec 11		137
	Big Creek Twp., Oscoda County; T26N, R2E, SE1/4, SW1/4 and NW1/4 of Sec 3; SE1/4 and SW1/4 of Sec 4; SE1/4 of Sec 5; NE1/4 and NW1/4 of Sec 10.		166
	Total Acreage		320

Commission order dated December 8, 1995 revised Article 201 of the Mio license eliminating these 320 acres of federal lands for the purpose of calculating the annual charges for recompensing the United States for the use, occupancy and enjoyment of these lands.

ATTACHMENT 11

Mio Hydroelectric Project No. 2448
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 12

Loud Hydroelectric Project No. 2449
Exhibit A (Redline)

LOUD HYDROELECTRIC PROJECT
(FERC NO. 2449)

NEW LICENSE

FOR MAJOR PROJECT – EXISTING DAM

ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised ~~May~~ October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 3
A.5 ADDITIONAL APPURTENANT EQUIPMENT 3
A.5.1 CRANES 3
A.5.2 HOISTS 3
A.5.3 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 4

LOUD PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Loud Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Loud Project license.

A.1.1 DAM

The dam is approximately 2,180 feet in length and contains two sections of earth embankment, a powerhouse structure and a spillway section. The earth embankment sections extend approximately 2,000 feet in length and contain approximately 1,490 feet of concrete corewall. The powerhouse and spillway sections occupy approximately 180 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately 90 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 15.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates and contains a 6.5 foot high weir at a distance of approximately 45 feet downstream of the tainter gates.

In 2010, as part of the Part 12D inspection report, survey work determined the control section of the emergency spillway to be 1,350 feet in length, rather than 100 feet as previously thought. The emergency spillway has an approximate elevation of 744.8 feet (NGVD29) and is located at the north end of the dam.

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam. It contains three open penstocks with a steel tainter gate at the entrance to each. Two of the penstocks each contain a 2,000 KW horizontal generating unit and the third penstock is vacant. The tainter gates leading to the penstocks with the generators are normally open while the tainter gate leading to the vacant penstock is closed.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 125 feet downstream from the powerhouse. The sides are concrete while the bottom is concrete for approximately the first 35 feet.

A.1.5 SUBSTATION

None. ~~The substation contains three single phase, 2,000 KVA, 2.5-46 KV transformers with necessary switching equipment and protective devices.~~

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 743 acres at a normal maximum surface elevation of 742.6 feet (NGVD29). The gross capacity of the Loud reservoir is 6,987 acre-feet. The normal usable storage capacity, that used under normal operating conditions (1.6 foot impoundment fluctuations), is 1,056 acre-feet. License Article 401 requires the Loud impoundment surface water elevation be maintained at 741.8 feet +/- 0.8 feet (or between 741.0 and 742.6 feet NGVD29).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two horizontal generating units is composed of one Allis-Chalmers Type E, 120 RPM, 3,400 horsepower at 26 foot head, quadruple 57 $^{1}/_{2}$ inch hydraulic turbine, direct-connected to a General Electric ATB, horizontal shaft, 120 RPM, 2.5 KV, 2,222 KVA, 0.9 PF, 3 phase, 60 cycle generator with a General Electric 32 KW direct-connected exciter. The turbine gates on Unit No.1 are controlled with a Sorensen Model 2 APH operator. The turbine gates on Unit No. 2 are controlled by Allis Chalmers #3 oil pressure governors. The units are set in open penstocks, longitudinal with the stream.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line includes the generator lead line from each unit running to a 2.4 kV bus and then to the powerhouse building wall. The lines then run approximately 250 feet underground from the powerhouse building wall to the 46 kV transformer bank and ends at an interconnection with the local distribution system at a non-project 46 kV distribution substation.

~~There are no primary transmission lines included in the new license.~~

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A powerhouse crane of 20 ton capacity manufactured by the Shaw Electric Crane Company.

A.5.2 HOISTS

There are three fixed hoists for the penstock tainter gates and three fixed hoists for the spillway tainter gates. These hoists are driven by electric motors.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 2,400 volt bus which feeds through an oil circuit breaker to a transformer bank. Station power is supplied from the 2,400 volt bus by a 112.5 KVA 2400/240/120 transformer, spill deck power is provided by a 50 KVA 2400/240/120 volt transformer. Control voltage is supplied by a 12 cell battery charged by a 240VAC, 130VDC battery charger from station power.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G of this application are:

	Location/Description		Area (Acres)
	Oscoda Twp. Iosco County; T24N, R6E, SE1/4 and SW1/4 of Sec 17; SE1/4, SW1/4 and NW1/4 of Sec 19; Sec 20.		536
	Plainfield Twp., Iosco County; T24N, R5E, SE1/4 of Sec 11; SW1/4 and NW1/4 of Sec 12; Sec 13; NE1/4 of Sec. 14; NE1/4 and SE1/4 of Sec. 24.		155
	Total Acreage		691

Commission order dated December 8, 1995 revised Article 201 of the Loud license reducing the number of acres for calculating the annual payment for use of US Lands from the 691 acres identified above to 5.87 acres. Commission Order dated August 2, 2010 provided an additional revision to Article 201 that included a recalculation of the 5.87 acres (increased to 6.7 acres) and included an additional 19.3 acres for a total of 26 acres of US Lands for calculating the annual payment.

ATTACHMENT 13

Loud Hydroelectric Project No. 2449
Exhibit A (Clean)

LOUD HYDROELECTRIC PROJECT
(FERC NO. 2449)

NEW LICENSE

FOR MAJOR PROJECT – EXISTING DAM

ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWAY 1
A.1.3 POWERHOUSE/PENSTOCK 2
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 3
A.5 ADDITIONAL APPURTENANT EQUIPMENT 3
A.5.1 CRANES 3
A.5.2 HOISTS 3
A.5.3 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 4

LOUD PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Loud Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Loud Project license.

A.1.1 DAM

The dam is approximately 2,180 feet in length and contains two sections of earth embankment, a powerhouse structure and a spillway section. The earth embankment sections extend approximately 2,000 feet in length and contain approximately 1,490 feet of concrete corewall. The powerhouse and spillway sections occupy approximately 180 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately 90 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 15.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates and contains a 6.5 foot high weir at a distance of approximately 45 feet downstream of the tainter gates.

In 2010, as part of the Part 12D inspection report, survey work determined the control section of the emergency spillway to be 1,350 feet in length, rather than 100 feet as previously thought. The emergency spillway has an approximate elevation of 744.8 feet (NGVD29) and is located at the north end of the dam.

A.1.3 POWERHOUSE/PENSTOCK

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam. It contains three open penstocks with a steel tainter gate at the entrance to each. Two of the penstocks each contain a 2,000 KW horizontal generating unit and the third penstock is vacant. The tainter gates leading to the penstocks with the generators are normally open while the tainter gate leading to the vacant penstock is closed.

A.1.4 TAILRACE

A fan shaped concrete lined tailrace extends approximately 125 feet downstream from the powerhouse. The sides are concrete while the bottom is concrete for approximately the first 35 feet.

A.1.5 SUBSTATION

None.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 743 acres at a normal maximum surface elevation of 742.6 feet (NGVD29). The gross capacity of the Loud reservoir is 6,987 acre-feet. The normal usable storage capacity, that used under normal operating conditions (1.6 foot impoundment fluctuations), is 1,056 acre-feet. License Article 401 requires the Loud impoundment surface water elevation be maintained at 741.8 feet +/- 0.8 feet (or between 741.0 and 742.6 feet NGVD29).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum.

A.3 GENERATING EQUIPMENT

Each of the two horizontal generating units is composed of one Allis-Chalmers Type E, 120 RPM, 3,400 horsepower at 26 foot head, quadruple 57 $^{1}/_{2}$ inch hydraulic turbine, direct-connected to a General Electric ATB, horizontal shaft, 120 RPM, 2.5 KV, 2,222 KVA, 0.9 PF, 3 phase, 60 cycle generator with a General Electric 32 KW direct-connected exciter. The turbine gates on Unit No.1 are controlled with a Sorensen Model 2 APH operator. The turbine gates on Unit No. 2 are controlled by Allis Chalmers #3 oil pressure governors. The units are set in open penstocks, longitudinal with the stream.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line includes the generator lead line from each unit running to a 2.4 kV bus and then to the powerhouse building wall. The lines then run approximately 250 feet underground from the powerhouse building wall to the 46 kV transformer bank and ends at an interconnection with the local distribution system at a non-project 46 kV distribution substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A powerhouse crane of 20 ton capacity manufactured by the Shaw Electric Crane Company.

A.5.2 HOISTS

There are three fixed hoists for the penstock tainter gates and three fixed hoists for the spillway tainter gates. These hoists are driven by electric motors.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 2,400 volt bus which feeds through an oil circuit breaker to a transformer bank. Station power is supplied from the 2,400 volt bus by a 112.5 KVA 2400/240/120 transformer, spill deck power is provided by a 50 KVA 2400/240/120 volt transformer. Control voltage is supplied by a 12 cell battery charged by a 240VAC, 130VDC battery charger from station power.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G of this application are:

	Location/Description		Area (Acres)
	Oscoda Twp. Iosco County; T24N, R6E, SE1/4 and SW1/4 of Sec 17; SE1/4, SW1/4 and NW1/4 of Sec 19; Sec 20.		536
	Plainfield Twp., Iosco County; T24N, R5E, SE1/4 of Sec 11; SW1/4 and NW1/4 of Sec 12; Sec 13; NE1/4 of Sec. 14; NE1/4 and SE1/4 of Sec. 24.		155
	Total Acreage		691

Commission order dated December 8, 1995 revised Article 201 of the Loud license reducing the number of acres for calculating the annual payment for use of US Lands from the 691 acres identified above to 5.87 acres. Commission Order dated August 2, 2010 provided an additional revision to Article 201 that included a recalculation of the 5.87 acres (increased to 6.7 acres) and included an additional 19.3 acres for a total of 26 acres of US Lands for calculating the annual payment.

ATTACHMENT 14

Loud Hydroelectric Project No. 2449
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 15

Cooke Hydroelectric Project No. 2450
License Ordering Paragraph (B)(2) (Redline)

Project works consisting of: (a) two existing earth embankment dam sections, one 60 feet high to the north, and one 60 feet high to the south; (b) a 60-foot-high concrete slab spillway with a concrete spillway apron and a 12-foot-high concrete weir located 70 feet downstream from the spillway gates; (c) an existing impoundment with a normal maximum surface area of 1,627 acres at a surface level of 679.0 feet U.S. Geological Survey datum with gross storage of 26,749 acre-feet and normal usable storage of 1,743 acre-feet; (d) a powerhouse containing three generators with a total rated capacity of 9,000 kW and three turbines with a total best gate capacity of 6,609 kW; (e) ~~a 150-foot-long~~ transmission facilities ~~line~~; and, (f) appurtenant facilities.

ATTACHMENT 16

Cooke Hydroelectric Project No. 2450
Exhibit A (Redline)

COOKE HYDROELECTRIC PROJECT
(FERC NO. 2450)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED July 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised ~~January~~ October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWWAY 1
A.1.3 POWERHOUSE/PENSTOCK 1
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 3
A.4 PRIMARY TRANSMISSION LINE 4
A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.3 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 5

COOKE PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Cooke Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Cooke Project license.

A.1.1 DAM

The dam is approximately 871 feet in length consisting of two sections of earth embankments, a powerhouse block and a spillway section. The left embankment is approximately 550 feet in length and the right embankment is approximately 140 feet in length and contain approximately 685 feet of concrete corewall. The powerhouse block and spillway section occupy approximately 181 feet.

A.1.2 SPILLWWAY

The spillway is approximately 92 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 220 feet downstream from the tainter gates with a 12 foot high concrete weir approximately 70 feet downstream of the tainter gates.

A.1.3 POWERHOUSE/PENSTOCK

The steel framed, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam, and houses three 3,000 KW generating units. Each unit is in an open penstock with a steel tainter gate at the entrance.

To improve Operator safety when clearing trash from the trash racks, a trash rack rake system was installed for trash removal in 2018.

A.1.4 TAILRACE

A tailrace extends approximately 120 feet downstream from the powerhouse. The sides are constructed of reinforced concrete over the entire length while the bottom is reinforced concrete for approximately the first 35 feet and rip rap for the remainder of the tailrace.

A.1.5 SUBSTATION

None. ~~The substation adjoins the powerhouse on the south bank of the river and contains one 3 phase, 10,000 KV, 2.4-46 KV transformer with necessary switching equipment and protective devices. It also contains a 2,400-4,800 volt distribution substation and regulated distribution circuit which are not included in the license.~~

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,627 acres at a normal maximum surface elevation of 679.0 feet (NGVD29). The gross capacity of the Cooke reservoir is 26,749 acre-feet. The normal usable storage capacity, that under normal operating conditions (1.0 foot impoundment fluctuations), is approximately 1,596 acre-feet.

Article 401 of the Cooke license requires the Cooke impoundment be maintained at a surface water elevation of 678.5 feet +/- 0.5 feet (NGVD29) (or between 678.0 and 679.0 feet).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were

utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum or mean sea level.

A.3 GENERATING EQUIPMENT

Each of the three generating units is composed of one Allis-Chalmers, Type E, horizontal, 180 RPM, 4,500 horsepower, Quidriflow 57 ½ inch hydraulic turbine, directed-connected to a General Electric ATB, horizontal, 180 RPM, 2.5 KV, 3,333. 0.90 PF, 3 phase, 60 cycle, generator. Units 1 and 3 each have a General Electric direct-connected exciter rated at 32 kW, 256 amperes and 125 volts DC and are equipped with an Automatic Voltage Regulator. Unit No. 2 has a Basler Electric static excitation and voltage regulating system including a DECS-300 excitation control system. The turbine gates on each unit have an American Governor PLC controlled HPU Digital governor. The units are set in open penstocks, longitudinal with the river.

FERC Order dated August 29, 2001 amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Cooke Project		
Unit #1	1,396	3,000
Unit #2	2,722	3,000
Unit #3	2,491	3,000
Total	**6,609**	**9,000**

The authorized installed capacity for the purpose of paying the United States an annual charge for the cost of administration is 6,609 kW.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line is two, approximately 25-foot long, 2.4 kV bus connections running from the powerhouse wall to the interconnections with the local distribution system at a non-project 46 kV distribution substation. ~~The 46 KV transmission line, approximately 150 feet in length, from the substation to the Licensee's interconnected primary transmission system is included in the license.~~

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A Shaw 20 ton capacity electric crane services the main generator room.

A.5.2 HOISTS

There is a fixed hoist for each penstock tainter gate and one fixed hoist for each of the three spillway gates. These hoists are driven by electric motors.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through an air circuit breaker to a 2,400 volt bus and thence through an air circuit breaker to the transformer. Station power is supplied from this bus by one, three phase 75 KVA, 2400/240volt transformer and one single phase 25 KVA, 2400-120/240 volt transformer. Control voltage is supplied by a 125 volt d-c cell battery charged by a rectifier type charger from station power.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Ocsoda Twp., Iosco County; T24N, R7E. SE1/4 of SE1/4 of Sec. 9; SW1/2 of SW1/4 of Sec. 10; NW1/4 of Sec. 15; Sec. 16; NE1/4, SW1/4 and NW1/4 of Sec. 21; NE1/4, SE1/4 and SW1/4 of Sec. 20; NE1/4, SW1/4 and NW1/4 of Sec. 31; NW1/4 of NW1/4 of Sec. 31.		1,160
	Oscoda Twp., Iosco County; T24N, R6E. Sec. 25; NE1/4 and SE1/4 of Sec. 26; NE1/4 of SW1/4 of Sec. 26; N1/2 of NE1/4 of Sec. 36.		380
	Total Acreage		1,540

Commission order dated December 8, 1995 revised Article 201 of the Cooke license reducing the number of acres for calculating the annual payment for use of US Lands from the 1,540 acres identified above to 5.54 acres.

ATTACHMENT 17

Cooke Hydroelectric Project No. 2450
Exhibit A (Clean)

COOKE HYDROELECTRIC PROJECT
(FERC NO. 2450)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED July 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 1
A.1.1 DAM 1
A.1.2 SPILLWWAY 1
A.1.3 POWERHOUSE/PENSTOCK 1
A.1.4 TAILRACE 2
A.1.5 SUBSTATION 2
A.2 PROJECT IMPOUNDMENT 2
A.3 GENERATING EQUIPMENT 2
A.4 PRIMARY TRANSMISSION LINE 4
A.5 ADDITIONAL APPURTENANT EQUIPMENT 4
A.5.1 CRANES 4
A.5.2 HOISTS 4
A.5.3 ADDITIONAL APPURTENANT EQUIPMENT 4
A.6 UNITED STATES LANDS 5

COOKE PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Cooke Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit F1 and F2 which are part of the Cooke Project license.

A.1.1 DAM

The dam is approximately 871 feet in length consisting of two sections of earth embankments, a powerhouse block and a spillway section. The left embankment is approximately 550 feet in length and the right embankment is approximately 140 feet in length and contain approximately 685 feet of concrete corewall. The powerhouse block and spillway section occupy approximately 181 feet.

A.1.2 SPILLWWAY

The spillway is approximately 92 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 220 feet downstream from the tainter gates with a 12 foot high concrete weir approximately 70 feet downstream of the tainter gates.

A.1.3 POWERHOUSE/PENSTOCK

The steel framed, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam, and houses three 3,000 KW generating units. Each unit is in an open penstock with a steel tainter gate at the entrance.

To improve Operator safety when clearing trash from the trash racks, a trash rack rake system was installed for trash removal in 2018.

A.1.4 TAILRACE

A tailrace extends approximately 120 feet downstream from the powerhouse. The sides are constructed of reinforced concrete over the entire length while the bottom is reinforced concrete for approximately the first 35 feet and rip rap for the remainder of the tailrace.

A.1.5 SUBSTATION

None.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 1,627 acres at a normal maximum surface elevation of 679.0 feet (NGVD29). The gross capacity of the Cooke reservoir is 26,749 acre-feet. The normal usable storage capacity, that under normal operating conditions (1.0 foot impoundment fluctuations), is approximately 1,596 acre-feet.

Article 401 of the Cooke license requires the Cooke impoundment be maintained at a surface water elevation of 678.5 feet +/- 0.5 feet (NGVD29) (or between 678.0 and 679.0 feet).

In 1988 a survey established plant elevations to the (then) modern USGS elevations (referenced to NGVD29) and plant elevations were revised to the new standard. The revised elevations were utilized in the 1992 Offer of Settlement, elevations included in the project license are referenced to USGS datum or mean sea level.

A.3 GENERATING EQUIPMENT

Each of the three generating units is composed of one Allis-Chalmers, Type E, horizontal, 180 RPM, 4,500 horsepower, Quidriflow 57 ½ inch hydraulic turbine, directed-connected to a General Electric ATB, horizontal, 180 RPM, 2.5 KV, 3,333. 0.90 PF, 3 phase, 60 cycle, generator. Units 1 and 3 each have a General Electric direct-connected exciter rated at 32 kW, 256 amperes and 125 volts DC and are equipped with an Automatic Voltage Regulator. Unit No. 2 has a Basler Electric static excitation and voltage regulating system including a DECS-300 excitation control system. The turbine gates on each unit have an American Governor PLC controlled HPU Digital governor. The units are set in open penstocks, longitudinal with the river.

FERC Order dated August 29, 2001 amended ordering paragraph B(2) and License Article 201 to reflect the demonstrated actual capacities for each unit as shown in the table below.

	Turbine Capacity (T)) (kW)	Generator Capacity (G) (kW)
Cooke Project		
Unit #1	1,396	3,000
Unit #2	2,722	3,000
Unit #3	2,491	3,000
Total	**6,609**	**9,000**

The authorized installed capacity for the purpose of paying the United States an annual charge for the cost of administration is 6,609 kW.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line is two, approximately 25-foot long, 2.4 kV bus connections running from the powerhouse wall to the interconnections with the local distribution system at a non-project 46 kV distribution substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A Shaw 20 ton capacity electric crane services the main generator room.

A.5.2 HOISTS

There is a fixed hoist for each penstock tainter gate and one fixed hoist for each of the three spillway gates. These hoists are driven by electric motors.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through an air circuit breaker to a 2,400 volt bus and thence through an air circuit breaker to the transformer. Station power is supplied from this bus by one, three phase 75 KVA, 2400/240volt transformer and one single phase 25 KVA, 2400-120/240 volt transformer. Control voltage is supplied by a 125 volt d-c cell battery charged by a rectifier type charger from station power.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Ocsoda Twp., Iosco County; T24N, R7E. SE1/4 of SE1/4 of Sec. 9; SW1/2 of SW1/4 of Sec. 10; NW1/4 of Sec. 15; Sec. 16; NE1/4, SW1/4 and NW1/4 of Sec. 21; NE1/4, SE1/4 and SW1/4 of Sec. 20; NE1/4, SW1/4 and NW1/4 of Sec. 31; NW1/4 of NW1/4 of Sec. 31.		1,160
	Oscoda Twp., Iosco County; T24N, R6E. Sec. 25; NE1/4 and SE1/4 of Sec. 26; NE1/4 of SW1/4 of Sec. 26; N1/2 of NE1/4 of Sec. 36.		380
	Total Acreage		1,540

Commission order dated December 8, 1995 revised Article 201 of the Cooke license reducing the number of acres for calculating the annual payment for use of US Lands from the 1,540 acres identified above to 5.54 acres.

ATTACHMENT 18

Cooke Hydroelectric Project No. 2450
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 19

Five Channels Hydroelectric Project No. 2453
License Ordering Paragraph (B)(2) (Redline)

Project works consisting of: (a) two existing earth embankment dam sections, one 45 feet high to the north, and one 45 feet high to the south; (b) a 60-foot-high concrete slab spillway with a concrete spillway apron and an 8-foot-high concrete weir located 60 feet downstream from the spillway gates; (c) an existing impoundment with a normal maximum surface area of 212 acres at a surface level of 715.0 feet U.S. Geological Survey datum with gross storage of 3,419 acre-feet and normal usable storage of 124 acre-feet; (d) a powerhouse containing two generating units with a total rated capacity of 6,000 kW; (e) ~~a 1,430-foot-long~~ transmission facilities ~~line~~; and, (f) appurtenant facilities.

ATTACHMENT 20

Five Channels Hydroelectric Project No. 2453
Exhibit A (Redline)

~~APPLICATION FOR NEW LICENSE FOR MAJOR PROJECT – EXISTING DAM~~

FIVE CHANNELS HYDROELECTRIC PROJECT

(FERC ~~PROJECT~~ NO. 2453)

NEW LICENSE

FOR MAJOR PROJECT – EXISTING DAM

ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN

EXHIBIT A

PROJECT DESCRIPTION ~~DESCRIPTION OF PROJECT~~

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES **1**

A.1.1 DAM 1

A.1.2 SPILLWWAY 1

A.1.3 POWERHOUSE/PENSTOCK 2

A.1.4 TAILRACE 2

A.1.5 SUBSTATION 2

A.2 PROJECT IMPOUNDMENT **2**

A.3 GENERATING EQUIPMENT **3**

A.4 PRIMARY TRANSMISSION LINE **3**

A.5 ADDITIONAL APPURTENANT EQUIPMENT **3**

A.5.1 CRANES 3

A.5.2 HOISTS 4

A.5.4 ADDITIONAL APPURTENANT EQUIPMENT 4

A.6 UNITED STATES LANDS **4**

FIVE CHANNELS PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Five Channels Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit Fl and F2 which are part of this application for new license.

A.1.1 DAM

The dam is approximately 800 feet in length and contains two sections of earth embankment, a powerhouse structure and a spillway section. The earth embankment sections extend approximately 620 feet in length and contain approximately 615 feet of concrete corewall. The powerhouse block and spillway section occupy approximately 180 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately. 90 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates and contains an 8 foot high concrete weir at approximately 60 feet downstream of the tainter gates.

A.1.3 POWERHOUSE/PENSTOCKS

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam. It contains three open penstocks with a steel tainter gate at the entrance to each. A 3000 KW horizontal generating unit is in each of two penstocks and the third penstock is vacant.

A.1.4 TAILRACE

A tailrace extends approximately 120 feet downstream from the powerhouse. The walls of this tailrace are concrete over the entire length while the bottom is concrete for approximately the first 35 feet only.

A.1.5 SUBSTATION

None. ~~The substation adjoins the powerhouse on the north bank of the river and contains three single phase, 2000 KVA, 2.4-46 KV transformers with necessary switching equipment and protective devices.~~

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 212 acres at a normal maximum surface elevation of 715.0 feet (mean sea level). The gross storage capacity of the Five Channels reservoir is 3419 acre-feet. The normal usable storage capacity, that used under normal operating conditions (0.6 foot impoundment fluctuations), is 124 acre-feet.

A.3 GENERATING EQUIPMENT

Each of the two generating units is composed of one Allis-Chalmers, horizontal, 150 RPM, 4500 horsepower, quadruple 55 inch diameter, Francis type hydraulic turbine direct-connected to a General Electric, horizontal, 150 RPM, 2.5 KV, 3333 KVA, 0.9 PF, 3 phase, 60 cycle generator with a General Electric 32 KW direct-connected exciter. The turbine gates are controlled by Allis Chalmers #3 oil pressure governors.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line includes the generator lead line from each unit running to the 2.4 kV bus and then to the powerhouse building wall, and the approximately 100-foot long 2.4kV

lines running from the powerhouse wall to an interconnection with the local distribution system at a non-project 46 kV distribution substation.

~~Approximately 1430 feet of 46 KV transmission line from the substation to the Licensee's interconnected transmission system is included in this application for new license~~

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A Shaw 20 ton capacity electric crane, with manual bridge and trolley travel, services the main generator room.

A.5.2 HOISTS

There is one electric motor driven hoist for each spillway and penstock tainter gate.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 2400 volt bus which feeds through an oil circuit breaker to a transformer bank. Station power is supplied from the 2400 volt bus by three 25 KVA, 2400-120/240 volt transformers and one 25 KVA, 2400-120/240/480 volt transformer.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Oscoda Twp. Iosco County;		83

	T24N, R6E, SE1/4 of Sec 16; NE1/4 of Sec 21; NE1/4, SE1/4 and NW1/4 of Sec 22; SW!/4 of Sec 33.		

ATTACHMENT 21

Five Channels Hydroelectric Project No. 2453
Exhibit A (Clean)

FIVE CHANNELS HYDROELECTRIC PROJECT
(FERC NO. 2453)

NEW LICENSE
FOR MAJOR PROJECT – EXISTING DAM
ISSUED JULY 15, 1994

AU SABLE RIVER – STATE OF MICHIGAN
EXHIBIT A

PROJECT DESCRIPTION

Revised October 2025

TABLE OF CONTENTS

A.1 PROJECT STRUCTURES 3
A.1.1 DAM 3
A.1.2 SPILLWAY 3
A.1.3 POWERHOUSE/PENSTOCKS 3
A.1.4 TAILRACE 4
A.1.5 SUBSTATION 4

A.2 PROJECT IMPOUNDMENT 4

A.3 GENERATING EQUIPMENT 4

A.4 PRIMARY TRANSMISSION LINE 4

A.5 ADDITIONAL APPURTENANT EQUIPMENT 5
A.5.1 CRANES 5
A.5.2 HOISTS 5
A.5.3 ADDITIONAL APPURTENANT EQUIPMENT 5

A.6 UNITED STATES LANDS 5

FIVE CHANNELS PROJECT

EXHIBIT A

DESCRIPTION OF PROJECT

A description of the Five Channels Project, as stipulated in 18 CFR 4.51(b) follows:

A.1 PROJECT STRUCTURES

Structures included as part of this project are described below. The location and general configuration of the listed structures as well as appurtenant facilities are shown on Exhibit Fl and F2 which are part of this application for new license.

A.1.1 DAM

The dam is approximately 800 feet in length and contains two sections of earth embankment, a powerhouse structure and a spillway section. The earth embankment sections extend approximately 620 feet in length and contain approximately 615 feet of concrete corewall. The powerhouse block and spillway section occupy approximately 180 feet of the dam.

A.1.2 SPILLWAY

The spillway is approximately. 90 feet in length and is constructed of reinforced concrete. It contains three steel tainter gates (normally closed), each 24 feet wide by 14.5 feet high. A concrete lined discharge channel extends approximately 210 feet downstream from the tainter gates and contains an 8 foot high concrete weir at approximately 60 feet downstream of the tainter gates.

A.1.3 POWERHOUSE/PENSTOCKS

The steel frame, reinforced concrete and masonry powerhouse occupies approximately 90 feet of the dam. It contains three open penstocks with a steel tainter gate at the entrance to each. A 3000 KW horizontal generating unit is in each of two penstocks and the third penstock is vacant.

A.1.4 TAILRACE

A tailrace extends approximately 120 feet downstream from the powerhouse. The walls of this tailrace are concrete over the entire length while the bottom is concrete for approximately the first 35 feet only.

A.1.5 SUBSTATION

None.

A.2 PROJECT IMPOUNDMENT

The reservoir has a normal maximum surface area of 212 acres at a normal maximum surface elevation of 715.0 feet (mean sea level). The gross storage capacity of the Five Channels reservoir is 3419 acre-feet. The normal usable storage capacity, that used under normal operating conditions (0.6 foot impoundment fluctuations), is 124 acre-feet.

A.3 GENERATING EQUIPMENT

Each of the two generating units is composed of one Allis-Chalmers, horizontal, 150 RPM, 4500 horsepower, quadruple 55 inch diameter, Francis type hydraulic turbine direct-connected to a General Electric, horizontal, 150 RPM, 2.5 KV, 3333 KVA, 0.9 PF, 3 phase, 60 cycle generator with a General Electric 32 KW direct-connected exciter. The turbine gates are controlled by Allis Chalmers #3 oil pressure governors.

A.4 PRIMARY TRANSMISSION LINE

The primary transmission line includes the generator lead line from each unit running to the 2.4 kV bus and then to the powerhouse building wall, and the approximately 100-foot long 2.4kV lines running from the powerhouse wall to an interconnection with the local distribution system at a non-project 46 kV distribution substation.

A.5 ADDITIONAL APPURTENANT EQUIPMENT

Additional equipment appurtenant to the project are:

A.5.1 CRANES

A Shaw 20 ton capacity electric crane, with manual bridge and trolley travel, services the main generator room.

A.5.2 HOISTS

There is one electric motor driven hoist for each spillway and penstock tainter gate.

A.5.3 ADDITIONAL APPURTENANT EQUIPMENT

Each of the two generators is connected through oil circuit breakers to a 2400 volt bus which feeds through an oil circuit breaker to a transformer bank. Station power is supplied from the 2400 volt bus by three 25 KVA, 2400-120/240 volt transformers and one 25 KVA, 2400-120/240/480 volt transformer.

A.6 UNITED STATES LANDS

Lands of the United States enclosed within the project boundary, as shown in Exhibit G are:

	Location/Description		Area (Acres)
	Oscoda Twp. Iosco County; T24N, R6E, SE1/4 of Sec 16; NE1/4 of Sec 21; NE1/4, SE1/4 and NW1/4 of Sec 22; SW!/4 of Sec 33.		83

ATTACHMENT 22

Five Channels Hydroelectric Project No. 2453
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 23

Webber Hydroelectric Project No. 2566
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 24

Hodenpyl Hydroelectric Project No. 2566
Exhibit F (Markup)

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 25

Reserved Easement

Form of Reserved Easements

Alcona Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of an existing electric facilities easement areas located in Sections 14,15, and 16, Town 25 North, Range 05 East, Curtis W. Township, Alcona County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the East one-quarter corner of said Section 15; thence North 89°18'13" West, 1330.69 feet, along the East and West one-quarter line of said Section 15, to a point on the East one-eighth line of said Section 15; thence North 00°44'57" West, 31.67 feet, along the East one-eighth line of said Section 15, to the POINT OF BEGINNING; thence South 89°30'25" East, 493.14 feet; thence North 75°40'59" East, 1,058.42 feet, to Reference Point "A"; thence North 06°27'35" East, 342.49 feet; thence South 87°55'01" East, 275.07 feet; thence North 54°34'27" East, 144.29 feet; thence South 66°37'06" East, 71.28 feet; thence South 68°37'01" East, 99.72 feet, to Reference Point "B"; thence North 13°14'11" East, 106.76 feet, to Reference Point "C"; thence South 75°35'17" East, 115.58 feet; thence South 75°51'18" East, 186.19 feet; thence North 68°12'52" East, 935.10 feet; thence North 81°39'32" East, 880.81 feet; thence North 74°18'53" East, 214.13 feet, to Reference Point "F"; thence continuing North 74°18'53" East, 223.54 feet; thence North 83°34'35" East, 455.17 feet, to Reference Point "E"; thence continuing North 83°34'35" East, 53.65 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence North 75°40'59" East, 140.16 feet; thence South 29°26'10" East, 78.82 feet, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 68°55'26" East, 83.13 feet, to a point on the Westerly Alcona Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence South 46°53'10" East, 105.56 feet, to a point on the Westerly Alcona Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 75°27'33" West, 48.28 feet, to Reference Point "D"; thence South 87°20'25" West, 73.32 feet; thence South 87°58'51" West, 46.20 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence South 12°44'44" East, 20.37 feet; thence North 86°33'11" West, 13.60 feet; thence North 84°49'53" West, 32.68 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "E"; thence South 01°39'24" East, 64.20 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

LVD2

Commencing at the East one-quarter corner of said Section 16; thence North 00°13'38" West, 66.32 feet, along the East line of said Section 16, to the POINT OF BEGINNING; thence South 89°35'22" West, 2,622.77 feet, to a point on the North and South one-quarter line of said Section 16, and to the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas

The centerlines of existing underground electric facilities easement areas located in Sections 9,10,11, and 14, Town 25 North, Range 05 East, Curtis W. Township, Alcona County, Michigan, said centerlines being described as follows:

UG Elec.1
BEGINNING at previously stated Reference Point "F"; thence South 62°05'27" East, 18.17 feet; thence North 63°14'10" East, 51.35 feet; thence Northeasterly, 908.30 feet, along the arc of a 562.00 foot radius curve to the left, the central angle of which is 92°36'02", and the long chord of which bears North 16°56'09" East, 812.62 feet; thence North 29°21'52" West, 92.83 feet, more or less, to a point on the North line of the South one-half of the Northwest one-quarter of the Northeast one-quarter, and to the POINT OF ENDING.

UG Elec.2
Commencing at the South one-quarter corner of said Section 11; thence North 01°41'09" West, 1997.72 feet, along the North and South one-quarter line of said Section 11, to the POINT OF BEGINNING; thence Northwesterly, 376.77 feet, along the arc of a 764.28 feet radius curve to the right, the central angle of which is 28°14'44", and the long chord of which bears North 83°28'26" West, 372.97 feet; thence North 69°21'04" West, 110.78 feet; thence North 52°26'14" West, 40.96 feet; thence North 37°29'11" West, 20.29 feet; thence North 45°33'53" West, 69.87 feet; thence North 41°41'25" West, 208.02 feet; thence North 39°39'56" West, 376.67 feet, more or less, to a point on the East and West one-quarter line of said Section 11, and to Reference Point "I", and the POINT OF ENDING.

UG Elec.3
Commencing at previously stated Reference Point "I"; thence North 39°41'41" West, 609.23 feet, to a point on the West one-eighth line of said Section 11, to the POINT OF BEGINNING; thence North 39°57'17" West, 65.16 feet; thence North 32°54'21" West, 175.68 feet, to Reference Point "G"; thence North 39°39'22" West, 429.32 feet; thence North 39°32'33" West, 375.06 feet; thence North 38°42'00" West, 200.95 feet; thence North 09°19'51" West, 30.55 feet; thence North 42°41'32" East, 104.08 feet; thence North 52°27'09" West, 431.16 feet; thence North 49°22'42" West, 143.16 feet; thence North 41°22'33" West, 288.33 feet; thence North 39°13'26" West, 327.49 feet; thence North 39°33'47" West, 244.79 feet, more or less, to a point on the North line of said Section 10, and to Reference Point "H", and the POINT OF ENDING.

And also Commencing at previously stated Reference Point "G"; thence South 24°15'51" West, 203.61 feet; thence South 18°50'14" West, 70.46 feet; thence South 08°35'41" West, 78.74 feet; thence South 29°33'03" East, 60.27 feet; thence South 39°26'12" East, 55.61 feet; thence South 21°44'21" East, 80.41 feet; thence South 26°23'59" East, 76.78 feet; thence South 26°59'44" West, 80.66 feet; thence South 05°34'28" East,

77.57 feet; thence South 05°50'40" West, 93.14 feet; thence South 10°49'24" West, 86.09 feet; thence South 25°49'30" West, 87.86 feet; thence South 52°13'30" East, 85.79 feet, to the POINT OF ENDING.

And also Commencing at previously stated Reference Point "G"; thence South 58°57'40" West, 73.44 feet, to the POINT OF ENDING.

UG Elec.4
Commencing at previously stated Reference Point "H"; thence South 89°32'57" West, 256.60 feet, along the North line of said Section 10, to the POINT OF BEGINNING; thence South 36°14'39" West, 265.60 feet; thence South 30°39'29" West, 262.63 feet; thence South 08°40'47" West, 56.90 feet; thence South 30°08'20" West, 219.12 feet; thence South 62°15'00" West, 220.70 feet; thence South 48°55'52" West, 77.48 feet; thence South 30°03'19" West, 219.76 feet; thence South 37°37'40" West, 200.32 feet; thence South 36°00'44" East, 55.26 feet; thence South 83°48'25" West, 79.77 feet; thence South 36°27'03" West, 103.97 feet; thence South 30°13'14" West, 170.91 feet; thence South 33°08'43" West, 200.01 feet; thence South 59°36'26" West, 71.43 feet; thence South 84°11'38" West, 64.70 feet; thence North 75°56'53" West, 176.07 feet; thence North 80°20'44" West, 80.15 feet; thence North 89°49'37" West, 80.68 feet; thence North 89°53'59" West, 81.33 feet; thence North 79°36'02" West, 109.43 feet; thence North 20°34'48" West, 29.42 feet, to the POINT OF ENDING.

UG Elec.5
Commencing at the North one-quarter corner of said Section 9; thence South 01°12'57" East, 425.25 feet, along the North and South one-quarter line of said Section 9; thence North 88°47'03" East, 1276.49 feet, to a point on the East one-eighth line of said Section 9, and to the POINT OF BEGINNING; thence North 73°20'18" East, 194.85 feet; thence North 80°09'08" East, 13.68 feet; thence South 74°50'25" East, 13.42 feet; thence South 51°59'59" East, 56.14 feet, to the POINT OF ENDING.

Legal Description: Alcona Substation Easement
A substation easement located in Section 14, Town 25 North, Range 5 East, Curtis W. Township, Alcona County, Michigan, more fully described as follows:
Commencing at the West one-quarter corner of said Section 14; thence North 88°13'06" East, 995.64 feet, along the East and West one-quarter line of said Section 14; thence North 01°46'54" West, 475.17 feet; to the POINT OF BEGINNING; thence North 68°29'55" West, 180.00 feet; thence North 21°11'02" East, 180.00 feet; thence South 68°29'55" East, 180.00 feet; thence South 21°11'02" West, 180.00 feet, to the POINT OF BEGINNING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in the
Northwest one-quarter of Section 14, Town 25 North, Range 5 East, Curtis W. Township, Alcona County, Michigan, said centerline described as:

Commencing at the West one-quarter corner of said Section 14; thence North 88°13'06" East, 1005.52 feet, along the East and West one-quarter line of said Section 14; thence North 01°46'54" West, 600.49 feet, to a point on the Easterly Alcona substation fenceline, and to the POINT OF BEGINNING; thence South

69°51'23" East, 47.37 feet; thence South 60°53'09" East, 31.95 feet; thence South 63°18'29" East, 70.97 feet; thence South 68°42'57" East, 166.07 feet; thence South 65°17'24" East, 69.30 feet; thence South 61°45'47" East, 171.20 feet; thence South 56°24'06" East, 27.14 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

The sidelines of said 20.00 foot wide easement centerline, are to be extended or shortened to meet at angle points beginning at points opposite of and perpendicular to the POINT OF BEGINNING, and ending on the centerline of Bamfield Road.

Calkins Project

Legal Description: Centerline for Existing LVD Line 1 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northwest 1/4 of Section 15, Township 2 North, Range 14 West, Valley Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northwest Corner of said Section 15; thence South 88° 07' 00" East 533.36 feet along the North Line of said Section 15; thence South 01° 53' 13" West 212.07 feet; thence South 85° 41' 17" East 15.49 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence South 85° 41' 17" East 115.56 feet to Reference Point 'A'; thence South 02° 12' 45" East 163.09 feet; thence North 63° 21' 13" East 512.89 feet to Reference Point 'B'; thence South 65° 17' 56" East 478.15 feet; thence South 74° 11' 45" East 313.53 feet, more or less, to the Point of Ending.

AND

Beginning at Reference Point 'B'; thence North 87° 42' 31" West 163.02 feet to the Point of Ending.

AND

A Proposed LVD line Commencing at Reference Point 'A', thence South 24° 08' 03" West 146.15 feet to Reference Point 'C'; thence South 65° 51' 57" East 72.38 feet to the Point of Ending.

AND

A Proposed LVD line Commencing at Reference Point 'C'; thence North 65° 51' 57" West 76.83 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 2 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 13, Township 2 North, Range 14 West, Valley Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the East 1/4 Corner of said Section 13; thence South 00° 32' 23" East 8.24 feet along the East Line of said Section 13; thence North 79° 50' 15" West 90.48 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence North 79° 50' 15" West 423.57 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 22W

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 19, and the Northwest 1/4 of Section 20, both Sections being in Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northeast Corner of said Section 19; thence South 00° 39' 19" East, along the East Line of Said Section 19, 1476.27 feet, more or less, to the FERC Project Boundary; thence South 62° 14' 27" West, along said FERC Project Boundary, 78.93 feet to the Point of Beginning; thence South 20° 29' 51" East 484.45 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 3 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northwest 1/4 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northwest Corner of said Section 28; thence South 89° 50' 37" East 128.04 feet along the North Line of said Section 28; thence South 76° 41' 55" East 88.23 feet, more or less, to the FERC

Project Boundary and the Point of Beginning; thence South 76° 41’ 55” East 285.28 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 4 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the North 1/2 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the West 1/4 Corner of said Section 28; thence North 00° 50’ 42” West 463.94 feet along the West Line of said Section 28; thence North 89° 09’ 18” East 2675.89 feet; thence North 06° 55’ 28” West 361.19 feet; thence North 54° 33’ 05” East 33.52 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence North 54° 33’ 05” East 127.14 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 5 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the North 1/2 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the West 1/4 Corner of said Section 28; thence North 00° 50’ 42” West 463.94 feet along the West Line of said Section 28; thence North 89° 09’ 18” East 2675.89 feet; thence South 52° 13’ 12” East 95.92 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence South 52° 13’ 12” East 270.59 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Cooke Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 15, 21, and 29, Town 24 North, Range 07 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the South one-quarter corner of said Section 15, thence South 89°43'53" East, 134.46 feet, along the South line of said Section 15; thence North 00°16'11" East, 1003.77 feet; thence South 89°43'49" East, 383.27 feet, to the POINT OF BEGINNING; thence North 01°14'58" West, 276.13 feet; thence North 50°33'57" West, 48.89 feet, to Reference Point "D"; thence North 51°12'46" West, 194.61 feet; thence North 68°08'42" West, 173.94 feet; thence South 62°40'53" West, 492.54 feet; thence South 26°59'48" East, 141.38 feet; thence South 62°01'37" West, 1260.23 feet, to Reference Point "G"; thence continuing South 62°01'37" West, 10.31 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "G"; thence South 00°27'56" East, 541.29 feet, more or less, to a point on the South line of said Section 15, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence South 85°32'18" West, 7.60 feet; thence South 54°58'50" West, 213.43 feet, to the POINT OF ENDING.

LVD2

BEGINNING at previously stated Reference Point "D"; thence North 12°24'45" East, 390.56 feet, to Reference Point "E"; thence North 65°36'53" East, 172.21 feet; thence North 11°28'51" East, 851.61 feet, to Reference Point "K"; thence North 02°01'58" West, 637.79 feet, more or less, to the North line of the South one-half of the Southwest one-quarter of the Northeast one-quarter, an the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "E"; thence South 79°49'32" West, 30.80 feet, to a point on the Easterly Cooke Dam substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "K"; thence North 79°20'58" East, 286.64 feet; thence North 54°57'12" East, 177.18 feet, more or less, to a point on the East one-eighth line of said Section 15, and the POINT OF ENDING.

LVD3

Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 1231.39 feet, along the West line of said Section 21; thence South 89°29'12" East, 50.65 feet, to a point on the East line of the Plat of Cooke Basin Subdivision No. 1, and to the POINT OF BEGINNING; thence North 88°30'38" East, 36.00 feet, to Reference Point "H"; thence North 73°30'37" East, 118.55 feet, more or less, to a point on a line being described as lying parallel with and 200.00 feet East of the West line of said Section 21, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 01°09'56" West, 353.17 feet; thence North 02°32'03" West, 121.57 feet; thence North 01°15'43" West, 170.13 feet: thence North 02°13'26" West, 173.28 feet, to Reference Point "I"; thence North 01°17'14" West, 172.13 feet, to Reference Point "J": thence North 01°36'59" West, 242.62 feet, more or less, to a point on the North line of said Section 21, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence South 88°01'53" West, 35.23 feet, more or less, to a point on the easterly line of the Plat of Cooke Basin Subdivision No. 1, and the POINT OF ENDING.

And also Beginning at previously stated Reference Point "J"; thence South 11°43'09" East, 703.88 feet, more or less, to a point on a line being described as lying parallel with and 200.00 feet East of the West line of said Section 21, and to the POINT OF ENDING.

LVD4

Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 5046.02 feet, along the West line of said Section 21; thence South 00°11'59" East, 1238.73 feet, along the East line of said Section 29; thence South 89°57'28" West, 1258.91 feet, to a point on the East one-eighth line of said Section 29, and to the POINT OF BEGINNING; thence South 44°13'10" West, 84.13 feet; thence South 35°37'28" West, 43.04 feet, more or less, to a point on the North one-eighth line of said Section 29, and to the POINT OF ENDING.

Legal Description: Monument Substation Easement at Cooke Dam

An easement in part of the Southeast one-quarter of Section 15, Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:

Commencing at the Southeast corner of said Section 15; thence North 89° 43'53" West, 1900.11 feet, along the South line of said Section 15; thence North 00°16'07" East, 804.18 feet, to the POINT OF BEGINNING; thence North 89°59'58" West, 350.00 feet; thence North 00°00'02" East, 350.00 feet; thence South 89°59'58" East, 350.00 feet; thence South 00°00'02" West, 350.00 feet, to the POINT OF BEGINNING.

Legal Description: Access Easement

A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in Northwest one-quarter of the Southeast one quarter of said Section 15; Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:

Commencing at the South one-quarter corner of said Section 15; thence South 89°43'53" East, 134.46 feet, along the South line of said Section 15; thence North 00°16'11" East, 1442.82 feet, to the POINT OF BEGINNING; thence along the centerline of the said 20 foot wide access easement centerline the following three (3) courses; North 64°06'29" East, 101.77 feet; thence South 46°09'11" East, 132.25 feet; thence South 26°42'20" East, 273.53 feet; to the POINT OF ENDING.

Legal Description: Centerline for existing underground Electric Facilities Area

The centerline of an existing underground electric facilities easement area located in the Southwest one-quarter of said Section 15, Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point "G"; thence North 08°08'14" West, 54.32 feet; thence North 05°01'13" East, 14.18 feet; thence North 28°45'42" East, 27.93 feet; thence North 28°02'40" West, 22.79 feet; thence North 40°26'21" West, 9.30 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Section 15, and 29, Town 24 North, Range 07 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:

46kV Line 29T (Segment 1)

Commencing at the South one-quarter corner of said Section 15; thence South 89°43'53" East, 490.92 feet, along the South line of said Section 15, to the POINT OF BEGINNING; thence North 01°23'51" West, 918.27 feet, to Reference Point "A"; thence North 01°28'47" East, 618.22 feet, to Reference Point "B"; thence North 01°44'26" East, 129.01 feet, to a point on the Southerly fence line of the Cooke Dam Substation, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 76°00'12" West, 211.16 feet; thence South 61°58'19" West, 1823.91 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.

46kV Line 29AI

BEGINNING at previously stated Reference Point "A"; thence North 88°45'18" East, 55.41 feet; thence North 02°00'24" West, 33.76 feet, to a point on the Monument Substation Southerly fence line, and to the POINT OF ENDING.

46kV Line 29T (Segment 2)

Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 5046.02 feet, along the West line of said Section 21; thence South 00°11'59" East, 1147.55 feet, along the East line of said Section 29; thence South 89°57'28" West, 1259.09 feet, to a point on the East one-eighth line of said Section 29, and to the POINT OF BEGINNING; thence South 44°09'52" West, 266.12 feet, more or less, to a point on the North one-eighth line of said Section 29, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Section 26, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29T (segment 3)

Commencing at the North one-quarter corner of said Section 26; thence South 00°39'07" East, 374.03 feet, along the North and South one-quarter line of said Section 26, to the POINT OF BEGINNING; thence South 67°55'34" East, 105.45 feet; thence South 08°28'14" West, 613.43 feet, more or less, to a point on the North and South one-quarter line of said Section 26, and the POINT OF ENDING.

Croton Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 7 and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the South one-quarter corner of said Section 7; thence North 00°51'24" East, 196.77 feet, along the North and South one-quarter line of said Section 07, to the POINT OF BEGINNING; thence North 89°32'23" East, 30.45 feet, to Reference Point "X"; thence continuing North 89°32'23" East, 6.35 feet; thence North 88°52'20" East, 1076.68 feet, to Reference point "A"; thence continuing North 88°52'20" East, 241.98 feet; thence South 32°30'42" East, 207.59 feet, to Reference point "B"; thence North 88°43'49" East, 131.24 feet; thence South 63°51'13" East, 172.77 feet; thence South 32°18'07" East, 393.19 feet; thence South 05°18'46" East, 166.08 feet, to Reference Point "D"; thence South 25°44'23" West, 47.18 feet; thence South 16°57'13" East, 47.47 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "X"; thence North 00°47'15" East, 1268.37 feet, to Reference Point "Y"; thence North 00°53'27" East, 1188.96 feet, more or less, to a point on the East and West one-quarter line of said Section 7, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Y"; thence South 87°46'05" West, 28.96 feet, to a point on the North and South one-quarter line of said Section 7, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence South 14°38'40" West, 150.42 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 17°21'27" West, 319.07 feet; thence South 00°39'42" West, 48.18 feet, to Reference Point "E"; thence continuing South 00°39'42" West, 784.64 feet, to Reference point "C"; thence South 00°39'42" West, 390.33 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence South 59°09'27" West, 59.54 feet, more or less, to the Western line of Government Lot 1 of said Section 18, and the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas
The centerlines of existing underground electric facilities easement areas located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

UG Elec1
Commencing at previously stated Reference Point "D"; thence South 74°54'18" West, 41.70 feet, to a point on the Easterly Croton Substation fence, and the POINT OF BEGINNING; thence South 82°53'39" East, 17.31 feet; thence South 04°59'07" East, 14.62 feet; thence South 00°34'07" West, 129.28 feet; thence South 76°56'21" East, 34.71 feet; thence South 79°41'48" East, 24.07 feet; thence South 63°49'49" East, 20.46

feet; thence South 36°31'29" East, 15.10 feet; thence South 74°31'59" East, 5.58 feet; thence South 78°47'35" East, 235.51 feet, to Reference Point "F", and the POINT OF ENDING.

UG Elec2
Commencing at previously stated Reference Point "F"; thence South 73°18'54" East, 167.44 feet, to the POINT OF BEGINNING; thence North 87°09'19" East, 32.07 feet; thence South 78°33'35" East, 24.18 feet; thence South 80°46'01" East, 24.26 feet; thence South 76°07'37" East, 27.04 feet, to Reference Point "G", and the POINT OF ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 4, 8, 17, and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD2
Commencing at previously stated Reference Point "G"; thence North 61°51'45" West, 22.12 feet, to the POINT OF BEGINNING; thence South 61°51'45" East, 22.12 feet; thence South 71°55'08" East, 175.85 feet, to Reference Point "H"; thence South 06°56'20" West, 168.01 feet, to Reference Point "I", thence South 07°01'38" West, 435.07 feet; thence South 01°02'48" West, 932.92 feet, to Reference Point "J"; thence North 88°21'06" West, 187.10 feet, to Reference Point "M"; thence South 60°25'51" West, 49.87 feet, to a point on the Easterly fence of Conklin Park Substation and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 84°31'23" East, 137.55 feet, more or less, to the Westerly right of way of S. Croton Hardy Dr, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 56°08'57" West, 45.67 feet, to Reference Point "L"; thence South 82°46'30" West, 154.36 feet; thence North 80°17'07" West, 40.38 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "L"; thence South 35°07'57" West, 103.10 feet; thence South 25°40'29" West, 75.67 feet, more or less, to the East and West one-quarter line of said Section 18, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence North 88°11'59" West, 189.62 feet; thence South 01°56'13" West, 26.28 feet; thence North 88°10'55" West, 333.46 feet; thence South 88°27'45" West, 592.76 feet, more or less, to a point on the East one-eighth line of said Section 18, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 14°29'08" East, 109.62 feet; thence North 14°25'02" East, 101.58 feet; thence North 10°45'26" East, 148.65 feet; thence North 01°39'49" East, 413.36 feet; thence North 44°52'04" East, 194.53 feet, more or less, to a point on the Easterly line of Lot 1, Block 9 of the Original Plat of the Village of Croton, and the POINT OF ENDING.

LVD3
Commencing at the North one-quarter corner of said Section 07; thence South 88°23'49" East, 2616.90 feet, along the North line of said Section 07; thence South 89°28'21" East, 2679.45 feet, along the North line of said Section 08, to Reference Point "N"; thence South 00°36'09" West, 1570.82 feet, along the North and South one-quarter line of said Section 08; thence South 89°23'51" East, 1347.14 feet, to the East one-eighth line of said Section 8, and the POINT OF BEGINNING; thence North 69°52'05" East, 126.88 feet; thence North 53°45'00" East, 1514.56 feet, more or less, to the East line of said Section 8, and the POINT OF ENDING.

LVD4
Commencing at previously stated Reference Point "N"; thence South 89°28'21" East, 2679.45 feet, along the North line of said Section 8; thence North 00°44'25" East, 3152.55 feet, along the West line of said Section 4; thence South 89°15'35" East, 848.27 feet, to a point on the centerline of Croton Dam Pond, and the West line of parcel located in Liber 160, Page, 510, Newaygo County Records, and the POINT OF BEGINNING; thence South 85°44'27" East, 451.55 feet, more or less, to a point on the Easterly FERC Project Boundary, and the East line of parcel located in Liber 160, Page 510, Newaygo County Records, and the POINT OF ENDING.

Legal Description: Croton Substation Easement
A substation easement located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point "E"; thence South 89°21'12" East, 589.79 feet; thence South 00°38'48" West, 374.71 feet; thence North 89°21'12" West, 12.16 feet; thence South 00°38'48" West, 23.10 feet, to Reference Point "AA"; thence North 89°21'12" West, 606.81 feet; thence North 00°09'37" West, 397.86 feet; thence South 89°21'12" East, 34.79 feet, to the POINT OF BEGINNING.

Legal Description: Conklin Park Substation
A substation easement located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

Commencing at the East one-quarter corner of said Section 18; thence South 88°37'59" West, 131.24 feet, along the East and West one-quarter line of said Section 18; thence North 01°22'01" West, 45.53 feet, to a point on the centerline of East 68th Street, and the POINT OF BEGINNING; thence North 88°54'26" West, 300.00 feet, along said centerline; thence North 01°05'34" East, 261.37 feet; thence South 88°54'26" East, 300.00 feet; thence South 01°05'34"" West, 261.37 feet, to the POINT OF BEGINNING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 07, and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

46kV Line 19D
Commencing at previously stated Reference Point "AA"; thence North 18°22'10" West, 23.90 feet, to a point on the Southerly Croton Substation fence; thence along said Southerly fenceline the following five

(5) courses; thence North 89°18'38" West, 47.11 feet, to Reference Point "W"; thence continuing North 89°18'38" West, 27.29 feet, to Reference Point "Q"; thence continuing North 89°18'38" West, 23.43 feet, to Reference Point "R"; thence continuing North 89°18'38" West, 22.82 feet, to Reference Point "S"; thence continuing North 89°18'38" West, 90.10 feet, to Reference Point "T", and the POINT OF BEGINNING; thence South 04°13'15" West, 229.15 feet; thence South 18°40'42" West, 398.09 feet; thence North 75°52'14" West, 161.75 feet; thence South 05°02'11" West, 431.42 feet; thence South 04°23'51" West, 876.17 feet; thence South 23°23'06" West, 6.81 feet, more or less, to a point on the East one-eighth line of said section 18, and the POINT OF ENDING.

46kV Line 95A
BEGINNING at previously stated Reference Point "S"; thence South 08°19'11" West, 235.23 feet; thence South 17°38'57" West, 307.61 feet; thence South 05°54'27" West, 103.56 feet; thence South 04°33'06" West, 893.32 feet; thence South 37°01'37" West, 442.61 feet; thence South 26°22'28" West, 52.87 feet, more or less, to a point on the East one-eighth line of said section 18, and the POINT OF ENDING.

46kV Line 20A
BEGINNING at previously stated Reference Point "R"; thence South 08°20'40" West, 639.03 feet; thence South 04°30'09" West, 830.27 feet; thence South 33°55'15" East, 370.08 feet; thence South 87°56'15" East, 551.08 feet; thence South 88°38'17" East, 182.43 feet, more or less, to a point on the East line of said Section 18, and the POINT OF ENDING.

46kV Line 112A
BEGINNING at previously stated Reference Point "Q"; thence South 07°27'41" West, 639.86 feet; thence South 04°54'48" West, 797.55 feet; thence South 34°00'27" East, 356.26 feet; thence South 87°45'34" East, 332.37 feet; thence South 88°14'25" East, 379.02 feet, more or less, to a point on the East line of said Section 18, and the POINT OF ENDING.

46kV Line 19C
BEGINNING at previously stated Reference Point "W"; thence South 00°29'23" West, 54.23 feet; thence North 77°21'38" East, 65.96 feet; thence North 00°55'11" East, 365.47 feet; thence North 49°39'14" West, 299.13 feet; thence North 34°17'32" West, 1885.46 feet; thence North 28°21'34" West, 1333.86 feet, to a point on the North and South one-quarter line of said Section 7, and the POINT OF ENDING.

Five Channels Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 22 and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the South one-quarter corner of said Section 23; thence South 87°54'00" West, 73.40 feet, along the South line of said Section 23 to the POINT OF BEGINNING and REFERENCE POINT "A"; thence North 60°59'16" East, 99.59 feet; thence North 33°36'50" West, 135.67 feet; thence North 36°54'18" East, 487.72 feet, to REFERENCE POINT "B"; thence South 44°58'00" East, 289.19 feet; thence North 48°12'01" East, 455.75 feet, to REFERENCE POINT "C"; thence North 51°06'30" West, 166.50 feet; thence North 15°41'29" East, 588.08 feet, more or less, to a point on the South one-eighth line of said Section 23, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 40°15'39" West, 171.72 feet, to the REFERENCE POINT "E"; thence North 39°55'53" West, 92.61 feet; thence North 60°19'52" West, 23.11 feet, to a point on the Easterly Five Channels Dam Substation fence, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "E"; thence North 21°54'16" West, 117.70 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated REFERENCE POINT "C"; thence South 67°13'05" East, 227.66 feet; thence South 70°20'20" East, 342.62 feet, to REFERENCE POINT "D"; thence South 00°37'00" East, 245.44 feet; thence South 79°22'41" East, 4.67 feet, more or less, to a point on the East one-eighth line of said Section 23, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "D"; thence South 77°22'25" East, 4.28 feet, more or less, to a point on the East one-eighth line of said Section 23, and the POINT OF ENDING.

LVD1a

Commencing at previously stated REFERENCE POINT "A"; thence South 87°54'00" West, 641.22 feet, along the South line of said Section 23, to the POINT OF BEGINNING, and REFERENCE POINT "F"; thence North 74°30'06" West, 294.09 feet; thence North 76°26'22" West, 507.56 feet; thence South 17°41'35" West, 100.79 feet; thence North 73°07'16" West, 2155.47 feet; thence North 73°18'55" West, 1686.41 feet, to REFERENCE POINT "G"; thence North 00°44'36" West, 1044.33 feet; thence South 87°41'38" West, 73.22 feet, more or less, to a point the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE PONT "G"; thence South 78°52'15" West, 79.53 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "G"; thence South 00°52'31" East, 748.67 feet; thence North 63°08'48" West, 93.94 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

Legal Description: Centerlines for Existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 21 and 22, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD2
Commencing at the Southwest corner of said Section 22; thence North 00°32'23" West, 2631.40 feet, along the West line of said Section 22, to the West one-quarter corner of said Section 22; thence North 88°00'54" East, 28.49 feet, along the East and West one-quarter line of said Section 22, to the POINT OF BEGINNING and REFERENCE POINT "I"; thence North 04°38'58" East, 29.96 feet; thence North 66°13'50" West, 922.68 feet, to REFERENCE POINT "J"; thence North 41°24'07" West, 570.59 feet; thence North 10°44'13" West, 328.89 feet; thence North 16°04'07" West, 244.17 feet; thence North 72°28'30" West, 404.85 feet; thence South 87°43'04" West, 477.29 feet; thence South 71°02'36" West, 421.17 feet; thence South 50°53'53" West, 39.65 feet, more or less, to the Easterly property line, of non-Consumers Energy property, as recorded in Liber 1162, Page 679, Iosco County Records, and the POINT OF ENDING and REFERENCE POINT "K".

And also, BEGINNING at previously stated REFERENCE POINT "J"; thence South 26°25'47" West, 388.61 feet; thence South 57°51'22" East, 166.53 feet, more or less, to a point on the East and West one-quarter line of said Section 21, and the POINT OF ENDING.

LVD2a
Commencing at previously stated REFERENCE POINT "K"; thence South 50°53'53" West, 459.95 feet, to the POINT OF BEGINNING; thence South 50°53'53" West, 187.69 feet; thence South 76°02'36" West, 175.78 feet, to the Westerly FERC Project Boundary line, and the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 22 and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29U
Commencing at previously stated REFERENCE POINT "A"; thence South 87°54'00" West, 105.05 feet, along the South line of said Section 23, to the POINT OF BEGINNING; thence North 35°18'33" East, 202.36 feet; thence North 34°58'55" East, 510.44 feet; thence North 23°40'10" West, 112.00 feet, to REFERENCE POINT "L"; thence continuing North 23°40'10" West, 29.92 feet thence North 28°46'40" West, 164.29 feet; thence South 43°24'35" West, 68.85 feet, to a point on the Five Channels Substation fence, and the POINT OF ENDING.

46 kV line 29T (segment 1)
Commencing at previously stated REFERENCE POINT "F"; thence South 87°54'00" West, 168.73 feet, along the South line of said section 23, to the POINT OF BEGINNING; thence North 69°34'58" West,

27.48 feet; thence North 76°30'21" West, 566.42 feet; thence North 73°10'35" West, 2205.37 feet; thence North 73°13'19" West, 1784.08 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

Legal Description: Centerline for Existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 22, and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29T (segment 2)
Commencing at previously stated REFERENCE POINT "I"; thence North 88°00'54" East, 71.80 feet, along the East and West one-quarter line of said Section 22, to the POINT OF BEGINNING; thence North 51°14'11" West, 113.74 feet; thence North 66°21'03" West, 882.00 feet; thence North 41°05'39" West, 401.09 feet; thence North 24°15'19" West, 464.11 feet; thence North 25°08'25" West, 243.79 feet; thence North 74°35'15" West, 372.03 feet; thence South 87°52'55" West, 461.51 feet; thence South 69°00'45" West, 464.52 feet; thence South 49°42'06" West, 457.60 feet; thence South 57°14'41 West, 390.10 feet; to a point on the Westerly FERC Project Boundary line, and the POINT OF ENDING.

Proposed 46 kV line
BEGINNING at previously stated REFERENCE POINT "L"; thence South 83°39'53" East, 30.00 feet, to a point on the West line of the Proposed Largo Substation Easement, and the POINT OF ENDING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet each side of the following described centerline located in the Southeast one-quarter of Section 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerline described as:

Commencing at the South one-quarter corner of said Section 23; thence North 00°41'18" West, 696.21 feet, along the North and South one-quarter line of said Section 23; thence North 89°18'42" East, 709.27 feet, to a point on the centerline of Old M-65, and POINT OF BEGINNING; thence Northwesterly, 107.50 feet, along the arc of a 450.00 foot radius curve to the left, the central angle of which is 13°41'13", and the long chord of which bears North 76°54'15" West, 107.24 feet; thence North 83°44'51" West, 346.20 feet; thence Westerly, 56.27 feet, along the arc of a 500.00 foot radius curve to the right, the central angle of which is 06°26'52", and the long chord of which bears North 80°31'25" West, 56.24 feet; thence North 77°17'59" West, 22.55 feet; thence Northwesterly, 96.06 feet, along the arc of a 150.00 foot radius curve to the right, the central angle of which is 36°41'28", and the long chord of which bears North 58°57'15" West, 94.42 feet; thence along a line non-tangent to said curve, South 42°22'40" West, a distance of 32.36 feet, to the POINT OF ENDING and REFERENCE POINT "H". The sidelines of said strip are to be extended or shorted to meet at angle points and to begin at the centerline of Old M-65 and to terminate at the Five Channels Dam Substation easement.

Legal Description: Largo Substation Easement
Substation easement located in Section 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, being described as follows:

Commencing at the Southwest corner of said Section 23; thence North 87°54'00” East, 2621.56 feet, along the South line of said Section 23, to the South one-quarter corner of said Section 23; thence North 47°29'46” East, 541.36 feet, to a point on the Easterly right of way of Old M 65 Trail; and the POINT OF BEGINNING of said easement; thence North 44°45'49” West, 277.68 feet; thence North 06°20'07” East, 219.00 feet, to a point on the North edge of Five Channels Road; thence along the North edge of Five Channels Road the following three (3) courses: South 83°32'31” East, 373.25 feet; thence South 79°44'36” East, 73.84 feet; thence South 73°05'02” East, 80.63 feet, to a point on the Easterly right of way of Old M 65 Trail; thence along the Easterly right of way of Old M-65 Trail the following four (4) courses: South 41°00'01” West, 113.29 feet; thence South 44°35'54” West, 74.86 feet; thence South 47°22'04” West, 69.96 feet; thence South 48°43'38” West, 227.45 feet, to the POINT OF BEGINNING of said easement.

Foote Project

Legal Description: Centerlines for existing HVD Electric Facilities Easement Area

The centerlines of existing electric facilities easement areas located Sections 28, 29, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29J (segment 1)

Commencing at the West one-quarter corner of said Section 29; thence North 89°22'25" East, 2331.67 feet, along the East and West one-quarter line of said Section 29; thence South 01°12'46" East, 479.97 feet, along the West line of the East 300 feet of the North one-half of the Southwest one-quarter of said Section 29, to the POINT OF BEGINNING, and REFERENCE POINT "A"; thence South 76°37'35" East, 1305.71 feet; thence South 76°43'03" East, 891.69 feet; thence South 76°43'12" East, 446.71 feet; thence South 76°50'49" East, 445.39 feet; thence South 47°19'59" East, 452.72 feet; thence South 47°31'49" East, 1353.08 feet; thence South 38°55'24" East, 487.88 feet; thence South 60°25'09" East, 482.14 feet; thence South 68°59'03" East, 453.26 feet; thence South 69°00'10" East, 3141.41 feet; thence South 59°37'54" East, 3371.74 feet; thence South 59°53'24" East, 414.17 feet; thence North 87°43'27" East, 459.30 feet; thence North 54°45'24" East, 1910.60 feet; thence North 32°58'34" East, 306.11 feet, to REFERENCE POINT "C"; thence North 32°01'59" East, 313.58 feet; thence North 10°41'19" West, 285.66 feet, to a point on the Southerly Foote Dam Substation fence, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 59°22'17" East, 54.69 feet, to the POINT OF ENDING.

46 kV line 29J (segment 2)

Commencing at the East one-quarter corner of said Section 30; thence South 87°59'57" West, 2709.41 feet, along the East and West one-quarter line of said Section 30, to a point on the North and South one quarter line of said Section 30; thence North 00°07'06" West, 81.25 feet, along the North and South one-quarter line to REFERENCE POINT "S"; thence continuing North 00°07'06" West, 46.63 feet, along the North and South one-quarter line, to the POINT OF BEGINNING, and REFERENCE POINT "T"; thence South 87°38'47" West, 857.65 feet; thence South 87°24'22" West, 427.03 feet; thence South 86°22'51" West, 176.82 feet; thence South 00°19'37" East, 113.16 feet, more or less, to a point on the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

46 kV line 29L (segment 1)

Commencing at previously stated REFERENCE POINT "A"; thence South 01°12'46" East, 49.79 feet, to the POINT OF BEGINNING; thence South 76°40'09" East, 3072.61 feet; thence South 47°41'01" East, 1778.53 feet; thence South 39°35'35" East, 543.60 feet; thence South 61°43'32" East, 531.95 feet; thence South 69°04'05" East, 3504.20 feet; thence South 59°41'21" East, 3452.82 feet, to REFERENCE POINT "D"; thence South 59°50'36" East, 343.48 feet; thence North 88°00'00" East, 489.51 feet; thence North 55°25'22" East, 1927.06 feet; thence North 31°18'38" East, 331.32 feet; thence North 31°41'17" East, 697.43 feet; thence North 44°50'46" East, 300.09 feet; thence North 40°55'35" East, 590.96 feet; thence North 24°06'50" East, 326.04 feet; thence North 40°10'12" East, 203.49 feet; thence North 40°18'11" East, 949.11 feet, more or less, to the North Line of said Section 35, and the POINT OF ENDING.

46 kV line 29L (segment 2)
BEGINNING at previously stated REFERENCE POINT "S"; thence South 87°35'28" West, 1167.14 feet; thence South 87°23'44" West, 107.58 feet; thence South 85°49'06" West, 155.55 feet; thence South 01°01'25" East, 65.85 feet, more or less, to a point on the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

46 kV line 29M
BEGINNING at previously stated REFERENCE POINT "D"; thence South 30°55'14" East, 424.12 feet, more or less, to the South one-eighth of said Section 34, and the POINT OF ENDING.

46 kV line 29T
Commencing at the East one-quarter corner of said Section 30; thence South 87°59'57" West, 4588.16 feet, along the East and West one-quarter line of said Section 30, to the POINT OF BEGINNING; thence North 02°42'35" West, 114.22 feet; thence North 89°46'57" West, 98.68 feet; thence North 30°28'01" West, 207.00 feet, more or less, to a point on a line 300 feet North of and parallel to the East and West one-quarter line of said Section 30, and the POINT of ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, 29, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1
BEGINNING at previously stated REFERENCE POINT "A"; thence South 76°37'35" East, 857.15 feet, to REFERENCE POINT "E"; thence continuing South 76°37'35" East, 448.56 feet, to REFERENCE POINT "F"; thence South 76°43'03" East, 891.69 feet, to REFERENCE POINT "G"; thence South 76°43'12" East, 446.71 feet; thence South 76°35'29" East, 445.16 feet, to REFERENCE POINT "H"; thence South 47°34'02" East, 451.95 feet, to REFERENCE POINT "I"; thence South 47°31'49" East, 1353.08 feet; thence South 38°55'24" East, 487.88 feet; thence South 60°25'09" East, 482.14 feet, to REFERENCE POINT "J"; thence South 68°59'03" East, 453.26 feet, to REFERENCE POINT "K"; thence South 69°00'10" East, 3141.41 feet, to REFERENCE POINT "L"; thence South 59°37'54" East, 3371.74 feet; thence South 59°27'50" East, 416.84 feet, to REFERENCE POINT "M"; thence South 63°46'20" East, 210.74 feet; thence South 88°08'59" East, 179.57 feet; thence South 66°17'20" East, 313.73 feet, more or less, to the South one-eighth line of said Section 34, and POINT OF ENDING, and REFERENCE POINT "N".

And also, BEGINNING at previously stated REFERENCE POINT "H"; thence North 47°14'38" West, 149.58 feet; thence North 25°33'06" East, 490.20 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "J"; thence South 00°02'51" West, 863.24 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "L"; thence North 41°20'46" East, 338.40 feet; thence North 43°12'24" East, 93.54 feet, to REFERENCE POINT "Q"; thence North 41°18'12" East, 299.67 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "Q"; thence North 60°07'38" West, 781.09 feet; thence North 26°22'32" West, 205.72 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "M"; thence North 37°16'27" West, 208.93 feet; thence North 53°13'55" West, 178.96 feet; thence North 49°41'57" West, 338.83 feet; thence North 45°21'14" West, 171.68 feet; thence North 48°14'01" West, 200.40 feet; thence North 46°35'55" West, 142.00 feet, to the POINT OF ENDING.

LVD2
Commencing at previously stated REFERENCE POINT "N"; thence North 89°31'09" East, 488.42 feet, along the South one-eighth line of said Section 34, to the POINT OF BEGINNING; thence North 29°36'48" West, 119.40 feet; thence North 20°11'58" East, 457.24 feet; thence North 51°39'12" East, 1031.23 feet; thence North 25°51'25" East, 305.41 feet; thence North 28°15'55" East, 234.69 feet; thence North 33°04'56" East, 299.44 feet; thence North 28°13'52" West, 155.37 feet; thence North 09°36'13" East, 232.50 feet, to REFERENCE POINT "O"; thence South 87°56'15" West, 103.97 feet, to a point on the Easterly Foote Dam Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "O"; thence North 83°02'56" East, 207.55 feet; thence North 64°46'21" East, 198.26 feet; thence North 39°00'12" East, 49.26 feet; thence North 40°35'45" East, 539.76 feet; thence North 19°12'28" East, 237.71 feet; thence North 40°31'30" East, 246.11 feet; thence North 40°07'38" East, 369.70 feet, to REFERENCE POINT "P"; thence North 40°41'23" East, 240.88 feet; thence North 40°17'47" East, 391.28 feet, to a point on the North Line of said Section 35, and the POINT OF ENDING.

LVD3
Commencing at the Northwest corner of said Section 35; thence North 89°07'26" East, 141.40 feet, along the North line of said Section 35, to the POINT OF BEGINNING; thence South 01°22'45" East, 17.12 feet; thence South 89°10'51" West, 1247.05 feet, to the POINT OF ENDING.

LVD4
BEGINNING at Previously stated REFERENCE POINT "T"'; thence South 87°38'47" West, 857.65 feet; thence South 87°24'22" West, 427.03 feet; thence South 86°22'51" West, 176.82 feet; thence South 87°53'22" West, 197.37 feet, to REFERENCE POINT "U"; thence South 88°22'26" West, 225.61 feet; thence North 89°46'57" West, 98.68 feet, to the POINT OF ENDING and REFERENCE POINT "V".

And also, BEGINNING at previously stated REFERENCE POINT "U"; thence South 03°44'36" East, 112.79 feet, more or less to the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

Legal Description: Centerlines for existing U/G Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, 29, 30, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

U/G Elec.1
BEGINNING at previously stated REFERENCE POINT "E"; thence South 18°55'10" West, 19.25 feet; thence South 39°11'20" West, 19.46 feet; thence South 48°50'21" West, 24.29 feet; thence South 41°15'07" West, 24.60 feet; thence South 20°16'48" West, 24.92 feet thence South 08°15'48" West, 22.80 feet; thence South 08°59'59" East, 30.76 feet; thence South 16°01'28" East, 74.53 feet; thence South 10°43'04" East, 50.60 feet, to the POINT OF ENDING.

U/G Elec.2
BEGINNING at previously stated REFERENCE POINT "F"; thence South 86°11'41" East, 15.79 feet; thence North 82°10'27" East, 15.75 feet; thence North 70°50'20" East, 27.13 feet; thence North 51°21'51" East, 24.85 feet; thence North 32°16'32" East, 60.43 feet, to REFERENCE POINT "R"; thence North 29°45'49" East, 23.92 feet; thence North 18°37'39" East, 103.03 feet; thence North 28°17'23" East, 110.90 feet; thence North 60°47'59" East, 16.03 feet; thence South 81°28'37" East, 20.89 feet; thence South 71°48'27" East, 17.14 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "R"; thence South 77°27'30" West, 5.16 feet; thence North 64°47'16" West, 65.00 feet; thence North 76°12'56" West, 99.30 feet; thence North 76°52'05" West, 70.01 feet; thence North 79°41'18" West, 74.61 feet; thence North 66°52'15" West, 33.80 feet; thence North 59°37'43" West, 33.24 feet; thence North 07°23'27" East, 42.98 feet; thence North 06°08'21" West, 28.50 feet, to the POINT OF ENDING.

U/G Elec.3
BEGINNING at previously stated REFERENCE POINT "G"; thence North 54°24'56" East, 12.83 feet; thence North 30°25'08" East, 50.43 feet; thence North 37°11'41" East, 43.40 feet; thence North 52°14'11" East, 36.29 feet; thence North 39°11'03" East, 40.91 feet; thence North 09°55'50" East, 94.45 feet; thence North 24°22'48" East, 77.58 feet; thence North 19°06'20" East, 90.52 feet; thence North 24°21'06" East, 29.72 feet; thence North 63°48'47" East, 12.57 feet; thence South 86°01'32" East, 27.98 feet; thence South 23°43'33" East, 2.15 feet, to the POINT OF ENDING.

U/G Elec.4
BEGINNING at previously stated REFERENCE POINT "I"; thence South 64°06'31" East, 38.99 feet; thence South 68°58'49" East, 22.77 feet; thence South 76°26'35" East, 26.44 feet; thence North 77°05'59" East, 49.30 feet; thence North 72°44'04" East, 23.34 feet; thence North 68°38'12" East, 82.28 feet; thence North 64°19'09" East, 76.04 feet, to the POINT OF ENDING.

U/G Elec.5
BEGINNING at previously stated REFERENCE POINT "K"; thence South 81°56'47" East, 29.28 feet; thence North 89°21'53" East, 38.94 feet; thence North 76°23'55" East, 40.26 feet; thence Northeasterly, 79.72 feet, along the arc of a 68.00 foot radius curve to the left, the central angle of which is 67°10'03", and the long chord of which bears North 28°27'03" East, 75.23 feet, to the POINT OF ENDING.

U/G Elec.6
BEGINNING at previously stated REFERENCE POINT "P"; thence North 78°15'09" East, 5.32 feet; thence South 71°16'46" East, 20.51 feet; thence South 39°01'53" East, 15.51 feet; thence South 14°07'56" East, 115.40 feet; thence South 09°45'28" East, 43.97 feet; thence South 02°09'47" East, 101.00 feet; thence South 06°53'30" East, 43.25 feet; thence South 14°04'40" East, 88.10 feet; thence South 19°25'12" East, 88.00 feet; thence South 20°44'08" East, 88.57 feet; thence South 25°05'43" East, 32.79 feet; thence South 30°52'57" East, 39.34 feet; thence South 21°32'37" East, 18.42 feet, to the POINT OF ENDING.

U/G Elec.7
Beginning at previously stated REFERENCE POINT "V"; thence South 06°03'37" East, 4.60 feet; thence South 52°07'25" West, 8.99 feet; thence South 69°46'33" West, 11.72 feet; thence South 53°48'37" West, 12.98 feet; thence South 60°16'16" West, 24.78 feet; thence South 72°33'37" West, 27.49 feet; thence South 79°24'40" West, 30.36 feet; thence South 82°14'27" West, 31.66 feet; thence South 84°12'46" West, 90.93 feet; thence North 76°46'04" West, 15.48 feet; thence North 71°17'07" West, 14.95 feet; thence North 58°53'58" West, 18.75 feet; thence North 44°57'32" West, 29.10 feet; thence North 41°31'45" West, 252.11 feet, more or less, to a point on a line 300 feet North of and parallel to the East and West one-quarter line of said Section 30, and the POINT of ENDING.

Legal Description: Rea Road Substation Easement
Substation easement located in the Northwest one-quarter of Section 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, being described as follows:

Commencing at the Northwest corner of said Section 35; thence South 01°06'32" East, 2113.65 feet, along the West line of said Section 35; thence North 88°53'28" East, 286.17 feet, to the POINT OF BEGINNING; thence North 28°20'22" East, 214.00 feet; thence South 57°10'43" East, 242.00 feet to a point on the centerline of Rea Road; thence Southwesterly along the centerline of Rea Road, 218.68 feet, along the arc of a 832.00 foot radius curve to the left, the central angle of which is 15°03'33", and the long chord of which bears South 41°04'23" West, 218.05 feet; thence North 56°27'23" West, 194.00 feet to the POINT OF BEGINNING.

Hardy Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 13, 14, 15, 21, 22, 23, 27, 28, 29, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the Southeast corner of said Section 28; thence North 89°14'36" West, 1012.05 feet, along the South line of said Section 28; thence North 00°45'24" East, 45.52 feet, more or less, to a point on the centerline of South Croton Hardy Drive, and to the POINT OF BEGINNING; thence North 88°55'21" West, 89.34 feet, to Reference Point "F"; thence continuing North 88°55'21" West, 815.41 feet, to Reference Point "A"; thence North 43°46'28" West, 505.39 feet; thence North 46°38'28" West, 496.60 feet, more or less, to the North-South one-quarter line of said Section 28, to Reference Point "B", and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence North 88°55'21" West, 715.20 feet, more or less, to a point on the North and South one-quarter line of said Section 28, and to the POINT OF ENDING.

LVD1a

Commencing at previously stated Reference Point "B"; thence North 48°43'38" West, 146.85 feet, to the POINT OF BEGINNING; thence continuing North 48°43'38" West, 772.80 feet; thence North 51°31'14" West, 308.82 feet; thence North 50°51'00" West, 114.63 feet, to Reference Point "C"; thence North 72°46'59" West, 92.78 feet; thence North 52°57'37" West, 621.02 feet; thence North 03°31'50" West, 246.80 feet; thence North 66°41'55" West, 96.02 feet, to Reference Point "D"; thence continuing North 66°41'55" West, 305.43 feet; thence North 78°05'28" West, 667.18 feet; thence North 02°59'04" East, 113.27 feet, to Reference Point "I"; thence North 00°08'25" East, 332.44 feet; thence North 00°00'58" West, 1002.45 feet, to Reference Point "P"; thence South 88°37'11" East, 1090.58 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 85°01'26" East, 369.89 feet; thence North 83°11'12" East, 711.99 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 89°25'47" West, 33.98 feet, more or less, to a point on the West line of said Section 28, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "P"; thence North 00°15'00" East, 18.18 feet, more or less, to a point on the North one-eighth line of said Section 28, and to the POINT OF ENDING.

LVD2

Commencing at the Southwest corner of said Section 27; thence South 89°32'48" East, 1181.07 feet, along the South line of said Section 27; thence North 00°27'12" East, 1330.27 feet, to a point on the South one-eighth line of said Section 27; thence North 42°02'14" East, 47.15 feet, to the POINT OF BEGINNING; thence North 49°03'47" West, 1173.91 feet; to the POINT OF ENDING.

LVD3
Commencing at the center one-quarter corner of said Section 27; thence North 89°13'16" West, 28.38 feet, along the East and West one-quarter line of said Section 27, to the POINT OF BEGINNING; thence North 02°18'47" East, 349.05 feet; thence North 00°52'02" East, 834.38 feet, to the POINT OF ENDING.

LVD4
Commencing at the Southeast corner of said Section 22; thence North 88°45'02" West, 42.81 feet, along the South line of said Section 22, to the POINT OF BEGINNING; thence North 01°43'14" West, 879.00 feet; thence North 16°10'38" West, 1009.12 feet; thence North 33°32'27" West, 991.22 feet, to Reference Point "G"; thence North 86°44'03" West, 333.66 feet; thence South 35°56'08" West, 318.03 feet; thence South 78°38'18" West, 309.35 feet; thence South 58°57'38" West, 239.37 feet, to Reference Point "H", and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "G"; thence South 87°22'01" East, 714.97 feet; thence North 86°28'12" East, 214.54 feet, more or less, to a point on the East line of said Section 22, and to the POINT OF ENDING.

LVD5
Commencing at the West one-quarter corner of said Section 23; thence North 00°33'59" East, 391.09 feet, along the East line of said Section 22; thence South 89°26'01" East, 1324.71 feet, to the POINT OF BEGINNING; thence North 01°29'13" East, 249.17 feet; to the POINT OF ENDING.

LVD6
Commencing at the Southwest corner of said Section 21, thence South 89°29'14" East, 2691.80 feet along the South line of said Section 21, thence North 00°37'49" East, 1391.35 feet, along the North-South one quarter line of said Section 21, to the POINT OF BEGINNING; thence South 89°05'11" East, 163.60 feet; thence South 81°58'21" East, 283.15 feet; thence South 26°55'23" East, 343.98 feet, to Reference Point "K", and the POINT OF ENDING.

LVD7
Commencing at the East one-quarter corner of said Section 22; thence North 00°33'59" East, 994.02 feet, along the East line of said Section 22; thence North 59°16'08" West, 667.11 feet, to a point on the North one-eighth line of said Section 22, and to the POINT OF BEGINNING; thence continuing North 59°16'08" West, 1033.36 feet, to Reference Point "L"; thence North 59°28'12" West, 353.53 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "L"; thence North 11°56'12" East, 353.66 feet, to the POINT OF ENDING.

LVD8
Commencing at the East one-quarter corner of said Section 14; thence North 89°00'00" West, 29.23 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence South 00°41'11" West, 1,324.51 feet, to a point on the South one-eighth line of said Section 14; thence continuing

South 00°41'11" West, 1,121.49 feet; thence North 74°06'02" East, 373.33 feet; thence North 67°17'31" East, 354.53 feet; thence North 08°33'44" East, 303.53 feet; to the POINT OF ENDING.

LVD9
Commencing at the East one-quarter corner of said Section 14; thence North 89°00'00" West, 29.23 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence North 00°45'31" East, 1,444.22 feet; thence North 00°26'33" West, 284.68 feet; thence North 89°52'11" East, 97.83 feet, to the POINT OF ENDING.

LVD10
Commencing at the North one-quarter corner of said Section 14; thence South 00°29'00" West, 1342.45 feet, along the North and South one-quarter line of said Section 14; thence North 89°20'55" West, 2666.53 feet, along the North one-eighth line of said Section 14, to a point on the East line of said Section 15; thence North 00°33'49" East, 7.75 feet, along the East line of said Section 15, to the POINT OF BEGINNING; thence South 86°15'29" West, 1026.75 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 15, 22, 31, 32, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

LVD11
Commencing at the East one-quarter corner of said Section 32; thence North 89°05'19" West, 21.73 feet, along the East and West one-quarter line of said Section 32, to the POINT OF BEGINNING; thence North 46°18'05" West, 231.69 feet; thence North 88°38'30" West, 281.15 feet; thence North 89°39'33" West, 1714.72 feet, to Reference Point "N"; thence North 89°39'23" West, 2747.11 feet; thence South 76°10'32" West, 284.31 feet; thence North 89°00'37" West, 727.25 feet; thence South 86°37'53" West, 377.74 feet; thence North 88°44'39" West, 351.75 feet, to Reference Point "O"; thence South 13°19'18" West, 690.47 feet; thence South 52°51'38" West, 521.89 feet; thence North 55°25'47" West, 227.87 feet; thence North 04°19'41" West, 460.39 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "N"; thence South 21°53'47" West, 154.02 feet, to a point on the East and West one-quarter line of said Section 32, and to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "O"; thence South 86°10'14" West, 264.49 feet, to the POINT OF ENDING.

LVD12
Commencing at the West one-quarter corner of said Section 22; thence North 00°41'29" East, 507.63 feet, along the West line of said Section 22; thence North 49°36'03" East, 759.41 feet, to a point on the Southeasterly property line of a Consumers Energy parcel described in Liber 143, Page 92, and to the POINT OF BEGINNING; thence North 49°38'48" East, 403.97 feet; thence North 34°57'01" East, 141.45 feet, to Reference Point "U", thence North 34°57'01" East, 47.31 feet, more or less, to a point on a line

being descried as the East line of the Northwest one-quarter of the Northwest one-quarter except the East 10 acres thereof of said Section 22, and to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "U", thence South 78°12'00" East, 27.14 feet, more or less, to a point on a line being descried as the East line of the Northwest one-quarter of the Northwest one-quarter except the East 10 acres thereof of said Section 22, and to the POINT OF ENDING.

LVD13
Commencing at the East one-quarter corner of said Section15; thence North 00°08'36" East, 18.78 feet, along the East line of said Section 15, and the Easterly FERC Project Boundary, to the POINT OF BEGINNING; thence North 88°51'51" West, 1112.33 feet, to REFERENCE POINT "X"; thence North 89°09'27" West, 388.71 feet; thence South 80°50'06" West, 199.26 feet, to the East and West one-quarter line of said Section 15, the POINT OF ENDING.

And also, BEGINNING at Reference Point "X"; thence South 00°27'22" West, 31.13 feet, to the East and West one-quarter line of said Section15, and the POINT OF ENDING.
Legal Description: Centerlines for existing underground Electric Facilities Areas
The centerlines of existing underground electric facilities easement areas located in Sections 13, 21, 22, 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, said centerlines being described as follows:

UG Elec1
BEGINNING at previously stated Reference Point "F"; thence North 22°56'28" West, 15.75 feet; thence North 73°06'00" East, 113.63 feet; thence North 62°51'11" East, 81.97 feet; thence North 31°22'03" East, 57.23 feet; thence North 02°56'17" East, 51.81 feet; thence North 43°30'03" East 28.62 feet; thence North 31°26'53" East, 37.97 feet, to the POINT OF ENDING.

UG Elec2
BEGINNING at previously stated Reference Point "D"; thence North 37°38'45" East, 265.09 feet; thence North 35°40'36" East, 542.04 feet, to the POINT OF ENDING.

UG Elec 3
Commencing at the Northwest corner of said Section 28; thence South 89°29'14" East, 2691.80 feet, along the North line of said Section 28, to a point on the North and South one-quarter line of said Section 28; thence South 00°22'48" West, 158.87 feet, along the North and South one-quarter line of said Section 28; thence South 89°37'12" East, 245.40 feet, to the POINT OF BEGINNING; thence North 26°30'35" East, 43.60 feet; thence North 35°38'16" East, 216.23 feet; thence North 39°44'45" East, 229.73 feet; thence North 23°15'26" East, 147.72 feet, to Reference Point "J"; thence North 30°07'58" East, 141.95 feet; thence North 20°04'16" East, 83.73 feet; thence North 01°34'17" East, 58.43 feet; thence North 25°59'21" West, 83.11 feet; thence North 34°05'49" West, 113.94 feet; thence North 16°57'28" West, 49.88 feet; thence North 02°48'39" East, 74.50 feet; thence North 06°32'18" East, 55.37 feet; thence North 18°27'35" East, 73.58 feet, to Reference Point "K", and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 65°16'57" West, 102.57 feet, to the POINT OF ENDING.

UG Elec4
BEGINNING at previously stated Reference Point "H"; thence North 17°30'09" East, 17.02 feet; thence North 75°48'09" East, 17.14 feet; thence North 00°28'08" East, 63.35 feet; thence North 14°27'52" West, 42.16 feet; thence North 09°19'09" West, 43.99 feet; thence North 03°11'29" East, 46.05 feet; thence North 56°12'37" East, 9.95 feet, to the POINT OF ENDING.

UG Elec 5
Commencing at the West one quarter corner of said Section 13; thence North 00°07'53" East, 6.57 feet, along the West line of Section 13, to the POINT OF BEGINNING; thence South 85°30'36" East, 126.13 feet; thence South 86°45'39" East, 133.19 feet; thence South 88°41'27" East, 124.13 feet; thence South 89°35'04" East, 200.95 feet; thence South 88°58'24" East, 81.80 feet; thence South 84°52'56" East, 61.14 feet; thence South 80°43'35" East, 186.09 feet; thence South 80°03'20" East, 77.25 feet; thence South 84°21'13" East, 125.49 feet; thence South 87°53'49" East, 74.01 feet; thence North 86°34'20" East, 101.77 feet; thence North 89°40'11" East, 92.20 feet; thence South 78°51'25" East, 22.02 feet; thence South 52°53'32" East, 35.30 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 13, 23, 24, 27, 28, 29, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, and in Section 18, Town 13 North, Range 10 West, Aetna Township, Mecosta County, Michigan, said centerlines being described as follows:

46kV Line 19C (Segment 1)
Commencing at the Southeast corner of said Section 28; thence North 89°14'36" West, 910.40 feet, along the South line of said Section 28; thence North 00°45'24" East, 95.91 feet, to a point on the centerline of South Croton Hardy Drive, and to the POINT OF BEGINNING; thence North 88°47'40" West, 996.06 feet; thence North 44°09'23" West, 851.82 feet; thence North 44°06'11" West, 1223.09 feet; thence South 83°55'04" West, 1429.25 feet; thence South 79°19'39" West, 603.41 feet; thence South 75°08'43" West, 1290.70 feet, more or less, to a point on the East one-eighth line of said Section 29, and to the POINT OF ENDING.

46kV Line 19C (Segment 2)
Commencing at the Southwest corner of said Section 27; thence South 89°32'48" East, 1,181.07 feet, along the South line of said Section 27; thence North 00°27'12" East, 1330.27 feet, to a point on the South one-eighth line of said Section 27, and to the POINT OF BEGINNING; thence North 42°02'14" East, 237.56 feet, more or less, to a point on the West one-eighth line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 3)
Commencing at the Center one-quarter corner of said Section 27; thence North 89°13'16" West, 326.68 feet, along the East and West one-quarter line of said Section 27, to the POINT OF BEGINNING; thence

North 42°10'52" East, 497.13 feet, more or less, to a point on the North and South one-quarter line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 4)
Commencing at the Center one-quarter corner of said Section 27; thence South 89°14'05" East, 1188.67 feet, along the East and West one-quarter line of said Section 27; thence North 00°45'55" East, 1,318.33 feet, to a point on the North one-eighth line of said Section 27, and to the POINT OF BEGINNING; thence North 66°44'20" East, 167.73 feet, more or less, to a point on the East one-eighth line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 5)
Commencing at the South one-quarter corner of said Section 23; thence North 88°56'27" West, 1238.21 feet, along the South line of said Section 23, to the POINT OF BEGINNING; thence North 64°48'28" East, 3240.33 feet; thence North 72°47'12" East, 6512.10 feet; thence North 02°06'07" East, 1023.18 feet; thence North 01°54'23" East, 772.49 feet; thence North 00°13'40" East, 1245.62 feet; thence North 33°50'14" East, 704.15 feet; thence North 17°37'49" East, 1942.90 feet; thence North 17°41'39" East, 246.37 feet, more or less, to a point on the North one-eighth line of said Section 18, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, and 32, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

46kV Line 19C (Segment 6)
Commencing at the East one-quarter corner of said Section 32; thence North 89°05'19" West, 323.71 feet, along the East and West one-quarter line of said Section 32, to the POINT OF BEGINNING; thence North 40°54'45" East, 492.12 feet, to a point on the East line of said Section 32, and to the POINT OF ENDING.

46kV Line 19C (Segment 7)
Commencing at the South one-quarter corner of said Section 28; thence North 89°41'32" West, 698.86 feet, along the South line of said Section 28, to the POINT OF BEGINNING; thence North 41°03'10" East, 1089.73 feet, to a point on the North and South one-quarter line of said Section 28, and to the POINT OF ENDING.

Hodenpyl Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 24 and 25, Town 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, and in Sections 1, 2, 10, 11, 16, 17, 19, 20, 21and 30, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, and in Sections 35 and 36, Town 24 North, Range 12 West, Wexford Township, Wexford County, Michigan, said centerlines being described as follows:

LVD1

BEGINNING at the East one-quarter corner of said Section 25; thence North 10°47'33" West, 236.94 feet, to Reference Point "M"; thence North 10°20'54" West, 589.89 feet; thence North 21°13'36" West, 235.90 feet, to Reference Point "A"; thence North 04°00'55" East, 112.18 feet; thence North 34°47'27" East, 594.18 feet, to Reference Point "B"; thence North 34°47'27" East, 155.90 feet; thence South 23°33'00" East, 123.17 feet; thence South 19°48'32" East, 105.76 feet; thence South 02°36'17" East, 165.43 feet; thence South 05°41'17" East, 17.16 feet; thence South 14°40'08" East, 18.18 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence South 89°08'10" East, 37.95 feet, more or less, to a point on the Easterly right of way line of Hodenpyl Dam Road, and to the POINT OF ENDING.

LVD1A

And also BEGINNING at previously stated Reference Point "A"; thence South 30°30'00" West, 82.13 feet; thence South 61°15'13" West, 174.95 feet, to the POINT OF ENDING.

LVD2

BEGINNING at previously stated Reference Point "B"; thence North 25°15'20" West, 2762.04 feet; thence North 12°16'52" East, 490.81 feet; thence North 51°30'13" East, 357.80 feet, to Reference Point "Z"; thence North 52°57'21" East, 209.59 feet; thence North 63°11'53" East, 229.74 feet, to Reference Point "C"; thence North 52°19'31" East, 283.15 feet, more or less, to a point on the East and West one-quarter line of said Section 24, and the POINT OF ENDING.

And also commencing at previously stated Reference Point "Z"; thence North 51°49'21" West, 277.81 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 03°15'52" East, 182.30 feet, more or less, to a point on the East and West one-quarter line of said Section 24, and the POINT OF ENDING.

LVD3

Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section 17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 549.69 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 69°30'14" West, 272.38 feet, to Reference Point "N"; thence

continuing South 69°30'14" West, 1487.56 feet; thence South 48°42'26" West, 313.74 feet; thence South 48°34'48" West, 297.02 feet; thence South 52°22'53" West, 129.33 feet, more or less, to a point on the East line of said Section 24, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "N"; thence North 14°57'45" West, 105.78 feet, more or less, to a point on the North one-eighth line of said Section 19, and to the POINT OF ENDING.

LVD4
Commencing at the West one quarter corner of said Section 17; thence South 89°06'47" East, 2625.45 feet, along the East and West one-quarter line of said Section 17; thence South 01°10'31" West, 2656.11 feet, along the North and South one-quarter line of said Section 17; thence North 89°06'34" West, 3.05 feet, along the North line of said Section 20, to the POINT OF BEGINNING; thence South 01°48'32" East, 588.96 feet, to the POINT OF ENDING.

LVD5
Commencing at the West one-quarter corner of said Section 17; thence South 89°06'47" East, 2625.45 feet, along the East and West one-quarter line of said Section 17; thence South 01°10'31" West, 1624.48 feet, along the North and South one-quarter line of said Section 17, to the POINT OF BEGINNING; thence North 69°24'27" East, 809.47 feet, more or less, to a point on the South one-eighth line of said Section 17, and to the POINT OF ENDING.

LVD6
Commencing at the East one-quarter corner of said Section 17; thence South 02°30'10" West, 1328.65 feet, along the East line of said Section 17; thence North 89°06'41" West, 148.74 feet, along the South one-eighth line of said Section 17, to the POINT OF BEGINNING; thence South 11°25'49" East, 90.14 feet, to Reference Point "Q'"; thence continuing South 11°25'49" East, 434.78 feet; thence South 10°56'59" West, 301.55 feet, to Reference Point "O", thence continuing South 10°56'59" West, 290.07 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Q"; thence South 71°07'57" West, 758.03 feet; thence South 44°10'56" West, 652.40 feet; thence South 68°35'50" West, 374.46 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "O"; thence South 77°42'52" West, 185.24 feet; to the POINT OF BEGINNING; thence North 77°42'52" East, 185.24 feet; thence North 75°31'48" East, 793.63 feet, to Reference Point "P"; thence continuing North 75°31'48" East, 393.69 feet; thence North 49°22'52" East, 456.76 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "P"; thence South 23°52'36" West, 398.51 feet, to the POINT OF ENDING.

LVD7
Commencing at the East one-quarter corner of said Section 17; thence South 02°30'10" West, 595.52 feet, along the East Line of said Section 17, to the POINT OF BEGINNING; thence North 69°29'39" East,

2383.47 feet; thence North 48°09'57" East, 4602.89 feet, to Reference Point "R"; thence continuing North 48°09'57" East, 886.78 feet, more or less, to a point on the South one-eighth line of said Section 10, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "R", thence North 51°52'30" West, 262.90 feet; thence North 16°06'32" West, 455.64 feet, more or less to a point on the South one-eighth line of said Section 9, and to the POINT OF ENDING.

LVD8
Commencing at the Southeast corner of said Section 16; thence South 89°19'22" West, 500.77 feet; along the South line of said Section 16; thence South 00°40'38" East, 20.17 feet, to the POINT OF BEGINNING; thence South 89°52'06" West, 732.04 feet; thence North 34°50'29" West, 215.03 feet; thence North 25°35'50" West, 295.64 feet; thence North 63°30'24" East, 337.09 feet; thence North 13°35'54" West, 118.36 feet, to the POINT OF ENDING.

LVD9
Commencing at previously stated Reference Point "R"; thence North 48°09'57" East, 1419.84 feet, more or less, to a point on the West one-eighth line of said Section 10, and to the POINT OF BEGINNING; thence North 48°16'19" East, 416.13 feet, to Reference Point "T"; thence continuing North 48°16'19" East, 1016.60 feet, more or less, to a point on the East and West one-quarter line of said Section 10, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "T" thence North 46°40'56" West, 63.95 feet, more or less, to a point on the South Easterly right of way line of North Hodenpyl Dam Road, and the POINT OF ENDING.

LVD10
Commencing at the Northeast corner of said Section 10; thence North 89°51'46" West, 1359.13 feet, along the North line of said Section 10; thence South 02°22'02" West, 1442.28 feet, along the East one-eighth line of said Section 10, to the POINT OF BEGINNING; thence North 89°29'30" West, 392.65 feet; thence South 48°12'39" West, 1325.65 feet; to Reference Point "AB"; thence South 00°56'10" East, 380.00 feet, to POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "AB"; thence South 48°12'39" West, 9.27 feet, more or less, to a point on the North and South one-quarter line of said Section 10, and to the POINT OF ENDING.

LVD11
Commencing at the Northwest corner of said Section 11; thence South 02°33'38" West, 1447.61 feet, along the West line of said Section 11, to the POINT OF BEGINNING; thence South 89°38'24" East, 149.58 feet, to Reference PT "U"; thence continuing South 89°38'24" East, 355.81 feet, to Reference PT "FF"; thence continuing South 89°38'24" East, 1452.75 feet; thence South 84°24'15" East, 649.70 feet, more or less, to a point on the North and South one-quarter line of said Section 11, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "U"; thence North 19°31'14" West, 71.83 feet, more or less, to a point on the Southerly right of way line of M-115, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "FF"; thence North 00°52'28" West, 67.58 feet, more or less, to a point on the Southerly right of way line of M-115, and to the POINT OF ENDING.

LVD12
Commencing at the West one-quarter corner of said Section 2; thence North 89°06'45" East, 3931.38 feet, along the East and West one-quarter line of said Section 2, thence North 02°50'27" East, 2605.94 feet, along the East one-eighth line of said Section 2; thence South 89°46'01" East, 542.14 feet, along the North line of said Section 2, to the POINT OF BEGINNING; thence South 08°25'36" West, 69.89 feet, to Reference PT "V"; thence continuing South 08°25'36" West, 139.52 feet, to a point on a line being described as being 14 rods South of the North line of said Section 2, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "V"; thence South 87°53'04" East, 138.83 feet, to the POINT OF ENDING.

LVD13
Commencing at the West one-quarter corner of said Section 2; thence North 89°06'45" East, 5240.81 feet, along the East and West one-quarter line of said Section 2; thence North 03°02'46" East, 2580.74 feet, along the East line of said Section 2; thence South 89°13'16" East, 1314.85 feet, along the North line of said Section 1; thence North 02°22'05" East, 83.38 feet, along the West one-eighth line of said Section 36, to the POINT OF BEGINNING to Reference Point "D"; thence South 84°02'15" East, 1316.61 feet, more or less, to a point on the North and South one-quarter line of said Section 1, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence North 84°02'15" West, 302.19 feet; thence North 02°21'17" East, 1198.24 feet; thence South 89°11'02" East, 655.97 feet; thence South 88°58'26" East, 698.97 feet; thence North 15°22'59" East, 0.50 feet; to a point on the South one-eighth line of said Section 36, and the POINT OF ENDING.

LVD14
Commencing at the East one-quarter corner of said Section 11; thence North 89°03'47" West, 1901.27 feet, along the East-West one-quarter line of said Section 11; thence North 00°'56'13" East, 20.15 feet, to the POINT OF BEGINNING; thence South 83°56'29" West, 116.72 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of an existing electric facilities easement areas located in Sections 24 and 25, Town 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, and in Sections 10, 11, 19 and 30, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, said centerlines being described as follows:

46kV Line 120E (Segment 1)
Commencing at the Northwest corner of said Section 11; thence South 02°33'38" West, 977.62 feet, along the West line of said Section 11; thence South 89°40'53" East, 494.47 feet, to a point on a line lying 30 rods

East of the West line of said Section11, and the POINT OF BEGINNING; thence continuing South 89°40'53" East, 2109.42 feet, more or less, to a point on the North and South one-quarter line of said Section 11, and to the POINT OF ENDING.

46kV Line 120E (Segment 2)
Commencing at the Northeast corner of said Section 10; thence North 89°51'46" West, 1,359.13 feet, along the North line of said Section 10; thence South 02°22'02" West, 970.60 feet, along the East one-eighth line of said Section 10, to the POINT OF BEGINNING; thence North 89°34'28" West, 1355.60 feet, more or less, to a point on the North and South one-quarter line of said Section 10, and to the POINT OF ENDING.

46kV Line 13J
BEGINNING at the East one-quarter corner of said Section 25; thence North 10°47'33" West, 236.94 feet; thence North 10°20'54" West, 589.89 feet; thence North 10°38'19" West, 212.99 feet; thence North 35°12'22" East, 587.89 feet, to a point on the Westerly fence line of Hodenpyl Substation, and the POINT OF ENDING.

And also, BEGINNING at the East one-quarter corner of said Section 25; thence South 39°27'53" East, 1695.78 feet, to a point on the South one-eighth line of said Section 30, and the POINT OF ENDING.

46kV Line 18C
Commencing at the East one-quarter corner of said Section 25; thence North 87°34'10" West, 662.47 feet, along the East and West one-quarter line of said Section 25; thence North 02°25'50" East, 740.69 feet, to the FERC boundary line, and the POINT OF BEGINNING; thence North 61°09'52" East, 227.90 feet; thence North 39°22'04" East, 334.59 feet; thence North 39°07'42" East, 554.30 feet, to Reference Point "X", thence continuing North 39°07'42" East, 96.03 feet; thence North 82°37'39" East, 57.80 feet, to the POINT OF ENDING.

46kV Line 120A
Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 2580.80 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 08°45'29" East, 911.97 feet; thence South 52°07'53" West, 272.77 feet; thence South 52°22'53" West, 129.33 feet, more or less, to a point on the West line of said Section 19, and to Reference Point "AA", and the POINT OF ENDING.

46kV Line 120A (Segment 2)
And also Commencing at previously stated Reference Point "AA" ; thence South 52°22'53" West, 232.40 feet, to a point on the East and West one-quarter line of said section 24, and to the POINT OF BEGINNING; thence South 52°19'31" West, 283.15 feet; thence South 53°00'19" West, 351.89 feet; thence South 14°42'30" East, 3311.84 feet; thence South 00°42'12" East, 67.24 feet, to a point on the Hodenpyl Dam Substation fence, and to the POINT OF ENDING.

46kV Line 18A
Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 2,633.00 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 09°10'57" East, 880.50 feet; thence South 52°32'22" West, 333.54 feet, to a point on the West line of said Section 19, and to Reference Point "CC", and to the POINT OF ENDING;

46kV Line 18A (Segment 2)
And also commencing at previously stated Reference Point "CC"; thence South 52°32'22" West, 157.93 feet; thence South 52°07'03" West, 193.56 feet, to a point on the East and West one-quarter line of said Section 24, and to the POINT OF BEGINNING; thence South 51°53'20" West, 215.22 feet; thence South 60°49'14" West, 608.17 feet; thence South 18°52'43" East, 2577.20 feet; thence South 15°34'51" East, 555.45 feet; thence South 83°02'50" East, 67.27 feet; thence South 06°10'12" East, 226.22 feet, to a point on the Hodenpyl Dam Substation fence, and the POINT OF ENDING.

Legal Description: Hodenpyl Dam Substation Easement
A substation easement in part of the Northeast one-quarter of Section 25, Township 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, more fully described as follows:
Commencing at the Southeast corner of said Section 25; thence North 01°24'22” East, 2622.86 feet, along the East line of said Section 25 to the East 1/4 corner of said Section 25; thence North 02°43'29” West, 864.44 feet, to the POINT OF BEGINNING; thence South 48°20'41” West, 141.00 feet, to a point in the centerline of No. 1 Road; thence South 61°07'22” West, 227.00 feet, along the centerline of said No. 1 Road; thence South 62°52'07” West, 200.00 feet, along the centerline of said No. 1 Road; thence North 01°13'01” West, 330.00 feet; thence North 49°01'47” East, 355.00 feet; thence South 52°50'31” East, 167.00 feet; thence South 27°44'44” East, 189.00 feet, to the POINT OF BEGINNING.

Loud Project

Legal Description: Centerlines for Existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the Southwest one-quarter of said Section 21; thence North 00°24'02" West, 2,575.33 feet, along the West line of said Section 21 to a point on the East and West one-quarter line of said Section 21; thence North 87°42'26" East, 531.22 feet, along the East and West one-quarter line of said Section 21, to the POINT OF BEGINNING, and REFERENCE POINT "A"; thence North 46°18'25" East, 713.13 feet; thence North 42°07'27" East, 309.95 feet; thence North 41°50'49" East, 412.83 feet, to REFERENCE POINT "B"; thence North 88°28'54" East, 311.59 feet; thence North 76°02'36" East, 120.58 feet, to a point on the Easterly FERC Project Boundary line, and the POINT OF ENDING, and REFERENCE POINT "C".

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 40°04'15" East, 74.98 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated POINT "B"; thence South 89°35'29" West, 166.11 feet, to the POINT OF ENDING.

Legal Description: Centerline for Existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 19 and 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29T
Commencing at Previously stated REFERENCE POINT "C"; thence South 00°02'55" East, 95.70 feet, along the Easterly FERC Project Boundary line to the POINT OF BEGINNING; thence South 57°14'41" West, 49.29 feet; thence South 78°34'52" West, 762.25 feet; thence North 01°11'14" West, 104.52 feet, to REFERENCE POINT "D"; thence North 01°11'14" West, 20.27 feet; to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 66A (segment 1)
BEGINNING at previously stated REFERENCE POINT "A"; thence North 46°18'25" East, 713.13 feet; thence North 42°07'27" East, 309.95 feet; thence North 72°04'53" West, 180.51 feet; thence North 11°50'24" East, 113.84 feet; thence North 28°07'46" East, 40.27 feet, to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 66A (segment 2)
Commencing at the Southwest corner of said Section 19; thence North 89°19'55" East, 17.38 feet, along the South line of said Section 19, to the POINT OF BEGINNING and REFERENCE POINT "E"; thence North 53°57'04" East, 229.63 feet; thence North 89°23'12" East, 3401.81 feet, more or less, to the East one-eighth line of said Section 19, and the POINT OF ENDING.

46 kV line 29A (segment 1)
Commencing at the Southwest one-quarter of said Section 21; thence North 00°24'02" West, 2,575.33 feet, along the West line of said Section 21 to a point on the East and West one-quarter line of said Section 21;thence North 87°42'26" East, 456.37 feet, along the East and West one-quarter line of said Section 21, to the POINT OF BEGINNING; thence North 46°18'37" East, 741.31 feet; thence North 13°28'54" East, 261.24 feet; thence North 13°53'40" East, 134.35 feet; thence North 26°36'35" East, 38.79 feet, to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 29A (segment 2)
Commencing at REFERENCE POINT "E"; thence North 89°19'55" East, 79.88 feet, along the South line of said Section 19, to the POINT OF BEGINNING; thence North 53°45'35" East, 130.18 feet; thence North 88°28'52" East, 614.93 feet; thence North 89°26'25" East, 2787.39 feet, more or less, to a point on the East one-eighth line of said Section 19, and the POINT OF ENDING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (feet) on each side of the following described centerline located in the Northwest one-quarter of Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerline described as:

Commencing at the Southeast corner of said Section 21; thence North 00°32'23" West, 2631.40 feet, along the East line of said Section 21, to the East one-quarter corner of said Section 21; thence North 00°20'39" West, 891.25 feet, along the East line of said Section 21; thence South 89°39'41" West, 3712.88 feet, to a point on the centerline of Loud Dam Road and the POINT OF BEGINNING; thence South 83°55'57" West, 62.17 feet; thence Southwesterly, 69.17 feet, along the arc of a 115.00 foot radius curve to the left, the central angle of which is 34°27'41", and the long chord of which bears South 66°42'06" West, 68.13 feet; thence South 49°28'16" West, 21.04 feet; thence Southwesterly, 92.68 feet, along the arc of a 300.00 foot radius curve to the left, the central angle of which is 17°42'02", and the long chord of which bears South 40°37'14" West, 92.31 feet; thence South 31°46'13" West, 38.52 feet; thence North 83°42'39" West, 20.43 feet, to the POINT OF ENDING. The sidelines of said easement are to be extended or shortened to begin perpendicular and adjacent to the POINT OF BEGINNING and ending on a line having a bearing of South 08° 14'17" West.

Legal Description: Loud Dam Substation Easement
Substation easement located in the Northwest one-quarter of Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, being described as follows:

BEGINNING at REFERENCE POINT "D"; thence North 81°45'43" West, 95.54 feet; thence North 13°12'33" East, 184.78 feet; thence South 81°45'43" East, 193.08 feet; thence South 08°14'17" West, 184.09 feet; thence North 81°45'43" West, 113.55 feet, to the POINT OF BEGINNING.

Mio Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Section 7, Town 26 North, Range 03 East, Mentor Township, Oscoda County, Michigan, and in Sections 2, 3, 5, 10, 11, and 12, Town 26 North, Range 02 East, Big Creek Township, Oscoda County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the East one-quarter corner of said Section 12; thence North 00°21'07" West, 758.90 feet, along the East line of said Section 12, to Reference Point "A", and to the POINT OF BEGINNING; thence South 78°41'13" West, 178.48 feet, to Reference Point "K"; thence South 29°33'26" West, 371.10 feet; thence South 15°07'43" West, 944.60 feet, to Reference Point "B"; thence continuing South 15°07'43" West, 81.41 feet, to Reference Point "C"; thence South 80°59'59" West, 1797.75 feet, to Reference Point "D"; thence continuing South 80°59'59" West, 361.81 feet, to Reference Point "E"; thence continuing South 80°59'59" West, 746.00 feet, to Reference Point "F"; thence South 52°14'31" West, 2519.97 feet, thence South 00°03'31" West, 59.14 feet, to Reference Point "M"; thence continuing South 00°03'31" West, 19.82 feet, more or less, to a point on the South line of said Section 11, and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "A"; thence North 78°41'13" East, 328.83 feet; thence North 87°17'54" East, 81.66 feet, to a point on the Westerly right of way line of State Highway M-33/M-72/South Mount Tom Road, and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "B"; thence South 16°42'03" East, 844.77 feet, to Reference Point "N", and to a point on the South one-eighth line of said Section 12; thence North 58°49'05" East, 32.03 feet, to a point on the West line of Lot 12, Block 14, of the Amended Plat of part of Blocks 5, 6, 14, vacated alley, vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 81°41'01" East, 43.40 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence North 39°30'20" West, 322.24 feet; thence North 32°40'42" West, 225.88 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "E"; thence North 23°29'19" West, 176.87 feet, to the POINT OF ENDING.

And Also BEGINNING at previously stated Reference Point "F"; thence North 60°18'38" West, 294.48 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence North 71°31'10" East, 84.88 feet; thence South 87°43'52" East, 192.58 feet; North 90°00'00" East, 134.80 feet; thence South 89°54'44", 366.24 feet; thence North 88°56' 48" East, 64.86 feet, more or less, to a point on the East line of the West one-half of the Southwest one-quarter of the Southwest one-quarter, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "K"; thence North 00°55'30" West, 120.75 feet; thence North 16°51'52" East, 274.83 feet; thence North 41°25'12" East, 182.67 feet, to Reference Point "G"; thence North 05°52'12" West, 23.54 feet, to Reference Point "H"; thence South 88°55'19" West, 320.48 feet; thence North 89°18'34" West, 554.97 feet, to Reference Point "I"; thence continuing North 89°18'34" West, 351.27 feet; thence North 01°07'25" West, 37.43 feet, more or less to a point on the North one-eighth line of said Section 12, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "G"; thence North 59°01'22" East, 143.37 feet, more or less, to a point on the North one-eighth line of said Section 7, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 00°19'21" West, 49.63 feet, to a point on the North one-eighth line of said Section 7, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 00°00'53" West, 43.76 feet, to a point on the North one-eighth line of said Section 12, and to the POINT OF ENDING.

LVD2
Commencing at the East one-quarter corner of said Section 12; thence South 00°20'56" East, 592.74 feet, along the East line of said Section 12, to a point on a line being described as the South line of the North 100 feet of the South 2143.68 feet of the East 360' feet of the Southeast one-quarter of said Section 12; thence South 89°40'57" West, 31.33 feet, along said South line, to the POINT OF BEGINNING; thence South 50°55'10" West, 23.63 feet; thence South 08°07'33" West, 288.01 feet; thence South 23°13'15" East, 119.38 feet, to a point on the North Line of the Amended Plat of part of Blocks 5, 6, 14, Vacated Alley, Vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

LVD3
Commencing at the West one-quarter corner of said Section 3; thence North 89°55'58" East, 714.13 feet, along the East and West one-quarter line of said Section 3, to the POINT OF BEGINNING; thence South 07°59'25" West, 62.05 feet, to Reference Point "O", and to the POINT OF ENDING.

LVD4
Commencing at the Southwest corner of said Section 3; thence South 89°54'48" East, 1331.39 feet, along the South line of said Section 3, to the POINT OF BEGINNING; thence North 03°23'28" East, 658.44 feet; thence North 58°07'08" West, 216.27 feet, to the POINT OF ENDING.

LVD5
Commencing at the North one-quarter corner of said Section 5; thence South 89°47'30" East, 517.46 feet, along the North line of said Section 5, to the POINT OF BEGINNING; thence South 77°29'23" West, 527.89 feet, more or less, to a point on the North and South one-quarter line of said Section 5, and to the POINT OF ENDING.

LVD6
Commencing at the North one-quarter corner of said Section 5; thence South 01°01'54" East, 1346.05 feet, along the North and South one-quarter line of said Section 5, to the POINT OF BEGINNING; thence North 48°10'47" East, 232.17 feet, to the POINT OF ENDING.

LVD7
Commencing at the North one-quarter corner of said Section 5; thence South 01°01'54" East, 2629.42 feet, along the North and South one-quarter line of said Section 5, to the POINT OF BEGINNING; thence North 89°05'34" East, 648.04 feet; thence South 64°42'35" East, 367.01 feet; thence South 53°07'06" East, 276.22 feet, to the POINT OF ENDING.

LVD8
Commencing at the East one-quarter corner of said Section 3; thence South 89°55'58" West, 2275.63 feet, along the East and West one-quarter line of said Section 3, to the POINT OF BEGINNING and Reference Point "S"; thence South 57°39'23" East, 122.61 feet; thence South 87°49'59" East, 698.33 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "S"; thence North 57°39'23" West, 124.39 feet; thence North 41°52'17" West, 252.41 feet; thence North 40°53'45" West, 161.61 feet, more or less, to a point on the North and South one-quarter line of said Section 3, and the POINT OF ENDING.

LVD9
Commencing at the West one-quarter corner of said Section 2; thence South 00°02'49" East, 1,325.63 feet, along the West line of said Section 2, to the Southwest corner of the Northwest one-quarter of the Southwest one-quarter of said Section 2; thence South 89°43'01" East, 316.23 feet, along the South one-eighth line of said Section 2; thence South 00°16'59" West, 16.11 feet, to the POINT OF BEGINNING; thence South 89°51'48" East, 212.40 feet; thence North 83°07'47" East, 125.04 feet, more or less, to a point on the South one-eighth line of said Section 2, to Reference Point "P", and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "P"; thence South 89°43'01" East, 1258.33 feet, along the South one-eighth line of said Section 2, to the POINT OF BEGINNING; thence South 80°54'37" East, 294.00 feet; thence North 78°45'14" East, 312.42 feet, to Reference Point "Q"; thence South 84°32'12" East, 152.09 feet, to the North-South one-quarter line of said Section 2, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Q"; thence South 00°20'49" East, 293.81 feet; thence South 30°28'28" East, 233.54 feet, to a point on the Westerly right of way of Maier Court, and to the POINT OF ENDING.

LVD10
Commencing at the Northwest corner of said Section 12; thence South 00°01'31" East, 8.22 feet, along the West line of said Section 12; thence South 89°50'12" West, 128.69 feet, to the POINT OF BEGINNING; thence North 89°50'12" East,556.89 feet; thence North 00°08'43" West, 5.00 feet, to a point on the North line of said Section 12, and to the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facility Area

The centerlines of existing underground electric facility easement areas located in Section 3 and12, Big Creek Township, Oscoda County, Michigan, said centerlines being described as follows;

U/G Elec.1

BEGINNING at previously stated Reference Point "N"; thence North 74°14'35" East, 15.07 feet; thence North 65°06'46" East, 14.27 feet, to a point on the West line of Lot 12, Block 14, of the Amended Plat of part of Blocks 5, 6, 14, vacated alley, vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

U/G Elec.2

BEGINNING at previously stated Reference Point "O"; thence South 02°03'17" West, 109.22 feet; thence South 12°46'14" West, 103.71 feet; thence South 15°13'54" West, 29.97 feet; thence South 04°30'23" East, 24.28 feet; thence South 19°59'01" West, 32.46 feet; thence South 05°41'17" West, 133.32 feet; thence South 03°53'24" West, 118.94 feet; thence South 11°55'10" West, 77.74 feet; thence South 06°03'22" West, 154.91 feet; thence South 05°04'06" West, 158.71 feet; thence South 09°24'55" West, 194.85 feet; thence South 03°37'49" West, 39.19 feet; thence continuing South 03°37'49" West, 27.21 feet; thence South 30°53'54" East, 88.56 feet; thence South 20°27'43" East, 31.71 feet; thence South 34°07'32" East, 46.66 feet; thence South 32°31'07" East, 28.91 feet; thence South 12°03'33" East, 18.47 feet; thence South 34°52'32" East, 60.04 feet; thence South 42°39'12" East, 41.83 feet; thence South 49°25'57" East, 41.25 feet; thence South 50°43'36" East, 457.53 feet; thence South 54°54'17" East, 59.25 feet, to the POINT OF ENDING.

Proposed U/G Elec.1

Commencing at the Southwest corner of said Section 3; thence South 89°54'48" East, 524.88 feet, along the South line of said Section 3, to the POINT OF BEGINNING; thence Northeasterly, 54.84 feet, along the arc of a 753.24 foot radius curve to the left, the central angle of which is 04°10'16", and the long chord of which bears North 50°27'38" East, 54.82 feet, to REFERENCE POINT "R"; thence Northeasterly, 110.47 feet, along the arc of a 753.24 foot radius curve to the left, the central angle of which is 08°24'10", and the long chord of which bears North 44°10'25" East, 110.37 feet; thence North 39°58'12" East, 531.29 feet; thence Northeasterly, 216.39 feet, along the arc of a 679.24 foot radius curve to the right, the central angle of which is 18°15'12", and the long chord of which bears North 49°05'39" East, 215.48 feet; thence South 43°40'25" East, a distance of 198.59 feet; thence North 46°19'35" East, 6.00 feet; thence North 43°40'25" West, 1680.22 feet; thence North 00°40'09" East, 851.62 feet; thence North 01°01'44" West, 50.59 feet, to a point on the East-West one quarter line of said Section 3, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "R"; thence South 26°38'41" East, 39.15' to a point on the South line of said Section 3, and the POINT OF ENDING.

Rogers Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas.
The centerlines of existing electric facilities easement areas located in Sections 1,2,11, and 14 Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the West one-quarter corner of said Section 14; thence North 89°02'14" East, 33.77 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence North 33°03'43" West, 24.73 feet; thence North 88°51'51" West, 20.24 feet, to a point on the West line of said Section 14, and the Westerly FERC Project Boundary line, and the POINT OF ENDING.

LVD2
Commencing at the Center one-quarter corner of said Section 14; thence North 00°53'28" East, 19.12 feet, along the North and South one-quarter line of said Section 14, to the POINT OF BEGINNING; thence South 88°16'11" West, 278.42 feet; thence South 89°53'46" West, 463.40 feet; thence North 65°49'51" West, 428.41 feet; thence North 78°12'22" West, 188.59 feet; thence North 85°06'28" West, 27.32 feet, more or less, to a point on the West one-eighth line of said Section 14, and the POINT OF ENDING, and REFERENCE POINT "A".

LVD3
Commencing at previously stated REFERENCE POINT "A"; thence North 00°29'51" East, 44.80 feet, along the West one-eighth line of said Section 14, to the POINT OF BEGINNING; thence North 49°42'38" East, 181.23 feet; thence North 40°22'57" East, 998.22 feet; thence North 05°59'49" West, 935.82 feet; thence North 29°10'22" West, 598.90 feet to REFERENCE POINT "B"; thence North 04°24'11" East, 62.41 feet, to REFERENCE POINT "C"; thence North 38°45'28" West, 129.12 feet; thence North 25°54'46" West, 113.73 feet; thence North 22°39'23" West, 128.72 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 69°46'39" East, 41.78 feet, to a point on the Stanwood Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 69°15'10" East, 36.13 feet, to a point on the Stanwood Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 62°34'08" West, 91.58 feet; thence South 86° 02'30 West, 740.99 feet; thence South 70°51'35" West, 74.89 feet to REFERENCE POINT "K"; thence North 26°33'40" West, 106.97 feet; thence South 69°13'24" West, 207.61 feet; thence North 26°17'28" West, 19.45 feet, more or less, to the boundary line of Consumers Energy parcel recorded in Liber 143, Page 92 and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "K"; thence South 08°51'25" West, 87.51 feet; thence South 18°44'29" East, 203.82 feet; thence North 83°27'52" East, 8.08 feet, more or less, to a point on the Easterly right of way line of Northland Drive, and the POINT OF ENDING.

LVD4
Commencing at the Southeast corner of said Section 2; thence North 89°27'49" West, 1242.54 feet, along the South line of said Section 2; thence North 00°32'11" East, 206.50 feet, to the POINT OF BEGINNING; thence South 89°15'36" West, 338.52 feet, more or less, to a point on the West line of Consumers Energy parcel recorded in Liber 144, Page 243, Mecosta County Records, and the POINT OF ENDING.

LVD5
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 2595.85 feet, along the East line of said Section 2, to REFERENCE POINT "M", and the POINT OF BEGINNING; thence North 49°05'15" West, 117.24 feet, to REFERENCE POINT "N"; thence South 36°26'52" West, 76.16 feet, more or less, to a point on the East and West one-quarter line of said Section 2, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "M"; thence South 47°11'37" East, 48.89 feet, more or less, to a point on the East line of Consumer Energy parcel recorded in Liber 177, Page 524, Mecosta County Records, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "N"; thence North 13°43'47" East, 164.93 feet, more or less, to a point on the Northerly line of parcel recorded in Liber 177, Page 524, Mecosta County Records, and the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas.
The centerlines of existing electric facilities easement areas located in Sections 1,2,11 and 14, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

46 kV line 19C
Commencing at previously stated REFERENCE POINT "A", thence North 00°29'51" East, 48.22 feet, along the West one-eighth line of said Section 14, to the POINT OF BEGINNING; thence North 48°59'26" East, 177.83 feet; thence North 40°28'46" East, 997.66 feet; thence North 05°59'52" West, 933.06 feet; thence North 29°31'47" West, 295.74 feet; thence North 28°54'20" West, 303.61 feet; thence North 43°24'54" West, 144.66 feet; thence North 43°25'15" West, 81.00 feet, to a point on the Rogers Dam Substation fence and the POINT OF ENDING.

46kV line 19W (segment 1)
Commencing at the North one-quarter corner of said Section 14; thence South 00°53'28" West, 35.96 feet, along the North and South one-quarter line of said Section 14, to the POINT OF BEGINNING, and REFERENCE POINT "L"; thence North 89°22'42" West, 661.96 feet to REFERENCE POINT "F"; thence South 89°04'33" West, 87.22 feet; thence North 61°50'23" West, 254.06 feet; thence North 63°04'39" West, 159.57 feet; thence South 34°36'58" West, 35.21 feet, to a point on the Rogers Dam Substation fence, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "L"; thence South 89°22'42" East, 1100.15 feet, to the southerly extension of the East line of the West 40 acres of Government Lot 3 of said Section 11, and the POINT OF ENDING.

46kV line 19W (segment 2)
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 948.54 feet; along the East line of said Section 2; thence North 89°54'05" East, 31.05 feet, to the POINT OF BEGINNING; thence North 00°05'55" West, 93.43 feet, more or less, to the Easterly extension of the Northerly line of Consumers Energy property described in Liber 144, Page 243, and the POINT OF ENDING.

46kV line 19W (segment 3)
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 2528.64 feet, along the East line of said Section 2; thence North 41°59'05" West, 7.91 feet to the POINT OF BEGINNING; thence North 41°59'05" West, 62.97 feet; thence North 00°04'26" East, 251.47 feet, to a point on the Northerly line of parcel recorded in Liber 177, Page 524, and the POINT OF ENDING.

46kV line 19AR
BEGINNING at previously stated REFERENCE POINT "F"; thence South 64°36'50" West, 86.22 feet; thence South 88°48'11" West, 100.70 feet, to a point on the Easterly Stanwood Substation fence, and the POINT OF ENDING.

Legal Description: Access Easement Rogers Dam Substation and Access Easement Stanwood Substation.
A strip of land 20 feet in width being 10 feet on each side of the following described centerline located in the Southwest one-quarter of Section 11, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerline described as:

Commencing at the South one-quarter corner of said Section 11; thence South 88°48'01" West, 626.70 feet along the South line of said Section 11 to a point on the centerline of 10 Mile Road, and the POINT OF BEGINNING; thence Northwesterly 117.92 feet, along the arc of a 374.70 foot radius curve to the right, the central angle of which is 18°01'51" and the long chord of which bears North 53°38'19" West, 117.43 feet, to REFERENCE POINT "H"; thence North 41°43'11" West, 57.61 feet; thence Northwesterly 94.56 feet along the arc of a 400.00 foot radius curve to the Left, the central angle of which is 13°32'42" and the long chord of which bears North 48°29'32" West, 94.34 feet; thence North 55°15'53" West, 166.00 feet; thence North 57°09'13" West, 134.27 feet; thence South 14°54'13" West, 26.70 feet; thence South 13°20'23" East, 80.27 feet; thence South 71°29'42" West, 57.76 feet; thence South 34°07'09" West, 46.91 feet, to the POINT OF ENDING, and REFERENCE POINT "I"

And also BEGINNING at previously established REFERENCE POINT "H"; thence South 55°00'43" West, 40.60, feet to the POINT OF ENDING, and REFERENCE POINT "J"

The sideline of said 20 foot side access easement are to be extended and shortened to meet at angle points beginning on the South line of said Section 11, and ending on the Stanwood Substation Easement and Rogers Dam Substation Easement.

Legal Description: Rogers Dam Substation Easement and Stanwood Substation Easement.
Substation easements located in the Southwest one-quarter of Section 11, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said easement described as**:**

Rogers Dam Substation Easement

BEGINNING at previously established REFERENCE POINT "I"; thence South 52°55'16" East, 84.94 feet; thence South 37°04'44" West, 125.65 feet; thence North 52°55'16" West, 95.30 feet; thence North 37°04'44" East, 125.65 feet; thence South 52°55'16" East, 10.36 feet, to the POINT OF BEGINNING.

Stanwood Substation Easement

BEGINNING at previously established REFERENCE POINT "J"; thence South 01°05'08" East, 149.11 feet; thence South 88°54'52" West, 219.16 feet; thence North 01°05'08" West, 149.11 feet; thence North 88°54'52" East, 219.16 feet, to the POINT OF BEGINNING.

Tippy Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, and Section 5 and 6, Town 21 North, Range 13 West, Norman Township, Manistee County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the Southwest corner of said Section 31; thence South 87°12'16" East, 36.73 feet, along the South line of said Section 31; thence North 01°06'18" East, 184.00 feet, to a point on the line 184 feet North of the South line of said Section 31, and to the POINT OF BEGINNING; thence continuing, North 01°06'18" East, 790.80 feet; thence North 66°27'27" East, 286.20 feet, to Reference Point “A”; thence continuing North 66°27'27" East, 122.21 feet, to Reference Point “B”; thence continuing North 66°27'27" East, 222.11 feet; thence North 09°35'51" East, 199.73 feet; thence North 49°22'14" West, 121.64 feet; thence North 30°52'46" West, 235.44 feet, to Reference Point “C”; thence North 84°03'26" West, 219.48 feet; thence North 13°27'08" West, 209.12 feet; thence North 01°58'51" East, 724.74 feet; to Reference Point “D”; thence North 33°42'53" East, 205.88 feet; thence North 01°25'51" East, 202.17 feet, to Reference Point “F”, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “A”; thence North 62°07'50” West, 311.34 feet, to a point on the West line of said Section 31, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “B”; thence South 87°45'18” East, 199.27 feet, to a point on the Westerly Synder Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “C”; thence North 14°56'43" East, 132.43 feet; thence North 42°19'26" East, 220.90 feet; thence North 07°05'02" East, 49.71 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “D”; thence North 02°02'02” East, 75.15 feet, to Reference Point “E”, and to the POINT OF ENDING.

LVD2
Commencing at the Southwest corner of said Section 31; thence South 87°12'16" East, 1385.23 feet, along the South line of said Section 31; thence North 00°52'13" East, 28.80 feet, to the POINT OF BEGINNING; thence South 87°16'08" East, 69.32 feet; thence South 77°21'50" East, 169.05 feet, more or less, to a point on the South line of said Section 31, and to the POINT OF ENDING.

LVD3
Commencing at the West one-quarter corner of said Section 5; thence North 01°50'54" East, 2131.30 feet, along the West line of said Section 5, to the POINT OF BEGINNING and Reference Point "J"; thence North 87°27'04" East, 77.97 feet, to Reference Point “I”, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 87°26'34" West, 225.06 feet, more or less, to a point on the South line of parcel described in parcel number 10-006-100-00, and POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas

The centerlines of existing underground electric facilities easement areas located in Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, and Section 5, Town 21 North, Range 13 West, Norman Township, Manistee County, Michigan, said centerline being described as follows:

U/G Elec.1

BEGINNING at previously stated Reference Point “E”; thence South 21°18'28" East, 13.67 feet; thence South 41°51'16" West, 12.61 feet; thence South 58°38'18" West, 44.83 feet; thence South 71°39'15" West, 19.89 feet; thence South 78°12'01" West, 87.74 feet; thence North 17°01'17" West, 38.52 feet, to the POINT OF ENDING.

U/G Elec.2

BEGINNING at previously stated Reference Point “F”; thence North 37°48'56" West, 10.11 feet; thence North 00°25'19" West, 68.22 feet; thence North 03°44'03" West, 137.79 feet, to the POINT OF ENDING.

U/G Elec.3

BEGINNING at previously stated Reference Point “I”; thence North 05°07'53" West, 104.52 feet, to the POINT OF ENDING.

and also BEGINNING at previously stated Reference Point "I"; thence South 83°12'14" East, 19.62 feet, to the POINT OF ENDING.

Legal Description: Access Easement

A strip of land thirty (30) feet in width being fifteen (15) feet on each side of the following described centerline located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, said centerline described as:

Commencing at the Southwest corner of said Section 31; thence North 00°47'15" East, 1009.77 feet, along the West line of said Section 31, to the POINT OF BEGINNING; thence South 89°12'45" East, 33.00 feet; thence North 74°38'38" East, 10.06 feet; thence Northeasterly, 63.67 feet, along the arc of a 400.00 foot radius curve to the left, the central angle of which is 09°07'14", and the long chord of which bears North 70°05'01" East, 63.61 feet; thence North 65°31'24" East, 248.62 feet; thence Northeasterly, 142.12 feet, along the arc of a 351.41 foot radius curve to the right, the central angle of which is 23°10'19", and the long chord of which bears North 77°06'34" East, 141.15 feet; thence North 88°41'44" East, 125.65 feet, to Reference Point “G”, and to the POINT OF ENDING of said ingress and egress easement centerline.

The sidelines of said easement centerline are to be extended or shortened to meet at angle points beginning on the West line of said Section 31, and ending on a line having a bearing of North 00°00'00" East.

Legal Description: Snyder Substation Easement
A substation easement located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point “G; thence North 00°00'00" East, 48.45 feet; thence North 90°00'00" East, 162.49 feet, to Reference Point "H", thence continuing North 90°00'00" East, 13.40 feet; thence South 00°00'00" East, 149.67 feet; thence North 90°00'00" West, 175.89 feet; thence North 00°00'00" East, 101.22 feet, to the POINT OF BEGINNING.

Legal Description: Centerline of 138kV Facilities Easement Area Line No. 1O
The centerline of an existing electric facilities easement area located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, said centerline being described as follows:

BEGINNING at previously stated Reference Point "H"; thence North 05°07'24" West, 41.62 feet, to a point on an existing 138kV Line No. 1B, and the POINT OF BEGINNING; thence South 05°07'24" East, 139.41 feet; thence South 89°11'31" West, 21.08 feet, to a point on the Easterly Synder Substation fence line, and the POINT Of ENDING.

Webber Project

Legal Description: Centerline for Existing LVD Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:

Commencing at the North 1/4 Corner of said Section 33; thence South 00° 24' 47" West 1363.35 feet along the North-South 1/4 Line of said Section 33 to the Point of Beginning; thence South 79° 01' 47" East 374.63 feet to the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 15B

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:

Commencing at the North 1/4 Corner of said Section 33; thence South 89° 38' 54" East 243.09 feet along the North Line of Said Section 33; thence South 32° 06' 49" East 1108.60 feet, more or less, to the North property line of a Consumers Energy Parcel as described in a deed to Commonwealth Power Company dated April 7, 1906 and to the Point of Beginning; thence South 32° 06' 49" East 488.13 feet; thence South 24° 51' 19" East 866.38 feet to Reference Point 'A'; thence South 69° 14' 04" West 85.36 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.

AND

Beginning at Reference Point 'A'; thence South 45° 35' 40" East 39.61; thence South 81° 06' 40" West 100.05 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.

AND

Beginning at Reference Point 'A'; thence South 23° 56' 39" East 42.75 feet to the Point of Ending.

AND

Beginning at Reference Point 'A'; thence North 75° 50' 24" West 23.58 feet; thence South 22° 50' 40" East 57.01 feet to the Point of Ending.

AND

Beginning at Reference Point 'A'; thence North 75° 50' 24" West 23.58 feet; thence South 66° 36' 02" West 66.85 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 15R

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:

Commencing at the East 1/4 Corner of said Section 33; thence North 00° 26' 50" East 45.56 feet along the East Line of said Section 33; thence North 89° 41' 48" West 360.44 feet; thence North 66° 40' 02" West 322.73 feet to the East Line of the West 1/2 of the East 1/2 of the Northeast Fractional 1/4 of said Section 33, as monumented, and to the Point of Beginning; thence North 66° 40' 02" West 528.88 feet; thence North 66° 37' 11" West 118.39 feet to the Southeasterly Line of Webber Dam Substation Easement and the Point of Ending.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:

Commencing at the East 1/4 Corner of said Section 33; thence North 89° 56’ 04” West 1330.38 feet along the East-West 1/4 Line of said Section 33 to the Point of Beginning; thence 66.21 feet along a non-tangential curve to the right, said curve having a central angle of 66° 39' 58”, a radius of 56.91 feet, and a long chord distance of 62.54 feet bearing North 57° 23' 43” East; thence South 89° 16’ 18” East 171.29 feet; thence 109.45 feet along a curve to the left, said curve having a central angle of 70° 05’ 22”, a radius of 89.47 feet, and a long chord distance of 102.75 feet bearing North 55° 41’ 01” East; thence North 20° 38’ 20” East 16.30 feet to Reference Point ‘B’; thence North 20° 38’ 20” East 16.30 feet; thence 67.56 feet along a curve to the left, said curve having a central angle of 33° 15’ 56”, a radius of 116.36 feet, and a long chord distance of 66.61 feet bearing North 04° 00’ 22” East; thence North 12° 37’ 36” West 78.02 feet; thence 172.87 feet along a curve to the right, said curve having a central angle of 58° 47’ 26”, a radius of 168.47 feet, and a long chord distance of 165.38 feet bearing North 16° 46’ 08” East; thence North 23° 39’ 36” West 33.18 feet; thence 88.58 feet along a curve to the left, said curve having a radius of 82.06 feet; and a long chord distance of 84.34 feet bearing North 54° 34’ 56” West; thence North 85° 30’ 15” West 78.62 feet; thence South 78° 43’ 56” West 111.34 feet to the Easterly line of the Existing Webber Dam Substation Easement and the Point of Ending.

AND
Commencing at Reference Point ‘B’; thence South 70° 31’ 59” East 62.41 feet to the Point of Ending.

Legal Description: Webber Substation Easement Area
An easement in part of the Northeast one-quarter of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, more particularly described as follows:

Commencing at the Center of said Section 33; thence East, along the East-West one-quarter line, 1980 feet (120 rods) more or less to the East line of the West half of the Southeast one-quarter of the Northeast one quarter of said section, as monumented, and to the Point of Beginning; thence North, along the East line of the West half of the Southeast one-quarter of the Northeast one-quarter of said Section, as monumented, 250 feet; thence West, parallel with the East-West one-quarter line of said Section, 300 feet; thence South, parallel with the East line of the West half of the Southeast one-quarter of the Northeast one-quarter of said Section, as monumented, 250 feet; thence East, along the East-West one-quarter line of said Section, 300 feet to the Point of Beginning.

ATTACHMENT 26

Form of Quitclaim Deed

Form of Quitclaim Deed

QUITCLAIM DEED

CONSUMERS ENERGY COMPANY (formerly Consumers Power Company), a Michigan corporation, One Energy Plaza, Jackson, Michigan 49201, Grantor,

for the sum of $_____, receipt of which Grantee hereby acknowledges,

quitclaims to

_____, Grantee,

the following described land located in the Township of _____, _____ County, State of Michigan:

See Exhibit A attached hereto.

(IF DECLARATION OF RESTRICTIVE COVENANT WAS RECORDED) subject to the terms conditions, regulations, restrictions, easements, covenants, and other matters of record including a Declaration of Restrictive Covenant recorded on _____ in Liber _____, Page _____, _____County Records, reserving to Grantor, its successors and assigns, forever, the following easements and rights:[1]

a) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a line or lines of electric facilities, said line or lines may vary in voltage from 0-46kV, together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor for the purpose of transmitting and distributing electricity in, on, over, under, across, and through a 40-foot wide strip of land, with an additional 10-feet of either side of the 40-foot wide strip for temporary workspace described as follows:

   (centerline description)

   together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy, and otherwise remove or control any trees, brush, roots, and other vegetation within this 40-foot wide easement, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy, and otherwise remove or control any trees, brush, roots, and other vegetation located outside of this 40- foot wide easement which are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this 40-foot wide easement. By accepting this deed, Grantee agrees, for Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said 40-foot wide easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said 40-foot wide easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said 40-foot wide easement.

b) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a line or lines of electric facilities, said line or lines may vary in voltage from 47-138kV, together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor for the purpose of transmitting and distributing electricity in, on, over,

[1] NTD: Quitclaim Deed to be finalized for each Project based on necessary Reserved Easements.

under, across, and through an 80-foot wide strip of land, with an additional 10-feet of either side of the 80-foot wide strip for temporary workspace described as follows:

(centerline description)

together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy and otherwise remove or control any trees, brush, roots, and other vegetation within this 80-foot wide easement, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy and otherwise remove or control any trees, brush, roots, and other vegetation located outside of this 80-foot wide easement which are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this 80-foot wide easement. By accepting this deed, Grantee agrees, for Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said 80-foot wide easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said 80-foot wide easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said 80-foot wide easement.

c) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a substation with all applicable appurtenances including but not limited to switching stations, transformers, line or lines of electric facilities together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor, said easement to include the fenced area as well as a 20-foot area outside of the fence allowing for temporary works space, appurtenances including but not limited to grounding pads, switch poles, etc. and screening which may include vegetation, and driveway (ingress/Egress) 20 feet in width.

    a. Also reserving an easement for mobile substation and or battery site, to be placed adjacent to the substation utilizing an area of not more than 100 feet by 100 feet.

(fenced area description)

together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation within 80 feet of the fenced area, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation located within 80 feet of the fenced area are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this easement. By accepting this deed, Grantee agrees, for Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said easement.

d) Excepting and reserving to the Grantor, its successor and assigns forever: a) all right, title, and interest in and to all coal, oil, gas, gas and other minerals not including sand, clay, or gravel in or under the surface of the land herein conveyed, and b) the exclusive right to store, restore, and/or protect oil, natural gas, carbon dioxide and other minerals in the subsurface strata underlying said land, but without entering upon the surface of the land herein conveyed.

Notwithstanding any other provision contained herein, in connection with the easements and rights reserved by Grantor herein, Grantee, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. _____, Federal Energy Regulatory Commission ("Commission") orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantor.

Grantor may, at Grantor's sole cost and expense, deliver to Grantee one or more requested changes to the terms, legal descriptions and/or location details of the easement rights as reflected herein. Upon such request, the parties shall work in good

faith to reach mutual agreement on any such changes, such agreement not to be unreasonably withheld, conditioned or delayed by either party. The parties shall execute a mutually agreed upon instrument in recordable form as may be reasonably necessary to memorialize any such mutually agreed upon changes. If reasonably required by Grantee, Grantee shall in accordance with applicable law and as Grantee may otherwise reasonably deem necessary, give notice to or seek approval (in form and substance reasonably acceptable to Grantee) from the Commission for any such changes as a condition to executing any such instrument, in which case, the parties shall cooperate and work in good faith to give such notices or seek such approvals as soon as reasonably practicable. Upon the execution of any such instrument, Grantor shall cause the instrument to be recorded at Grantor's sole cost and expense.

a) This conveyance is made expressly subject to rights and interests granted by Grantor to Michigan Electric Transmission Company ("METC") in respect to the above-described land as set forth in and on the terms and conditions of a certain Amended and Restated Easement Agreement between Grantor and METC dated April 29, 2002 (the "Easement Agreement"); which Easement Agreement is recorded in various counties, including _____ County where it is recorded in Liber _____ at Page _____.

Grantor does not hereby convey or assign to Grantee any rights to receive any part of the Base Rent payable by METC, its successors or assigns, under the Easement Agreement; and (as provided in Section 10.2 of the Easement Agreement) Grantor reserves all rights to receive said Base Rent in respect to the herein conveyed land.

Grantor also does not convey or assign to Grantee, and Grantor reserves, all rights and interests under Article 5 of the Easement Agreement in respect to the herein conveyed land; such reserved rights and interests expressly including (without limiting any other rights or interests under said Article 5 of the Easement Agreement) all rights under said Article 5: (i) to receive notice of any "Additions/Alterations" (as defined in said Article 5 of the Easement Agreement) to be undertaken by METC on the herein conveyed land, and (ii) to specify and to enforce work and design restrictions and precautions that METC is to follow in connection with an Addition/Alteration.

Grantor also does not convey or assign to Grantee, and Grantor reserves, all rights under, and subject to the terms and conditions of, the Easement Agreement to use and occupy and to authorize any third parties to use and occupy METC's Transmission Facilities with facilities constituting "Compatible Uses" as defined in the Easement Agreement, and to receive all revenues for any such third party uses or occupations of METC's Transmission Facilities.

b) Also reserving to Grantor the easement and right to enter at all times upon the land herein conveyed and to: (a) construct, operate, maintain, repair, inspect (including aerial patrol,) survey, improve, change the size of, enlarge, remove, relocate, reconstruct, and replace any number of existing or future electric and/or communications lines and facilities, which may consist of towers, pole structures, poles, wires, cables, conduits, crossarms, transformers, braces, guys, anchors, antennas and/or other fixtures and appurtenances, on, over, under and across any part of the land herein conveyed, including all public highways upon or adjacent to said land; and (b) cut, trim, remove, destroy or otherwise control any or all trees and brush which may, in the opinion of Grantor, interfere or threaten to interfere with or be hazardous to the construction, operation or maintenance of any of said lines and facilities. Grantee covenants and agrees, as a covenant that will run with the land, that no buildings or other structures will at any time be placed under or over any of said lines or facilities or within such proximity thereto as to interfere with, or in the opinion of Grantor threaten to interfere with, the construction, operation or maintenance of any of said lines or facilities. It is understood that the lines and facilities referred to above in this paragraph may, in whole in or part, be physically located on Transmission Facilities of METC pursuant to applicable provisions of the Easement Agreement, and/or may, in whole or in part, be located on the herein conveyed land separate from and independent of any Transmission Facilities of METC.

Except for the rights and interests under the Easement Agreement that are reserved to Grantor herein, Grantor's rights and interests under the Easement Agreement are, with respect (and only with respect) to the herein conveyed land, hereby conveyed to Grantee. Except specifically in connection with the use or exercise of rights under the Easement Agreement reserved by Grantor herein, Grantor's covenants, agreements and obligations under the Easement Agreement shall, with respect (and only with respect) to the herein conveyed land pass to Grantee and, as expressly provided in Section 10.2 of the Easement Agreement, Grantor shall not hereafter be liable therefore.

It is further understood that as used in any of the foregoing provisions hereof, references to "Grantor," "Grantee" and "METC" shall include their respective successors and assigns.

STATEMENT UNDER MCL 560.109(3): Grantor grants to Grantee the right to make all allowable divisions of the land conveyed, under Section 108 of the Parcels Division Act, 1967 PA 288, as amended.

NOTICE UNDER MCL 560.109(4): The land conveyed may be located within the vicinity of farmland or a farm operation. Generally accepted agricultural and management practices which may generate noise, dust, odors, and other associated conditions may be used and are protected by the Michigan Right to Farm Act.

Dated this _____ day of _____, 202____

CONSUMERS ENERGY COMPANY

By:_____

Its_____

Acknowledged before me in _____ County, Michigan, on _____, 20____, by _____ , _____ , of Consumers Energy Company, a Michigan corporation, for the corporation.

_____
Notary Public
_____ County, Michigan
My commission expires: _____

Prepared by:
Robert Marvin
Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201

When recorded, return to:
Julie Guinn (EP7-432)
Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201

Send subsequent tax bills to:
Grantee

EXHIBIT A

ATTACHMENT 27

Form of Temporary Substation Easement

Form of Temporary Substation Easement

TEMPORARY SUBSTATION EASEMENT AGREEMENT

THIS TEMPORARY SUBSTATION EASEMENT AGREEMENT (this "**Agreement**") is made this _____ day of _____, 2___ (the "**Effective Date**"), by and between **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("**Grantor**"), a grantor for indexing purposes; and **CONSUMERS ENERGY COMPANY**, a Michigan corporation ("**Grantee**"), a grantee for indexing purposes (the Grantor and Grantee are sometimes referred to individually as the "**Party**" or collectively as the "**Parties**").

W I T N E S S E T H:

1. That for and in consideration of the sum of Ten and 00/100 Dollars ($10.00), cash in hand paid, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor hereby grants and conveys unto Grantee and its apportionees, licensees, permittees, invitees, successors, successors-in-title and assigns, and their respective agents, employees, servants, tenants, subtenants, licensees, permittees, customers, invitees, contractors and subcontractors (collectively, the "**Grantee Parties**"), the following exclusive (except as expressly provided herein) and rights, privileges and easements of right-of-way (collectively, the "**Easements**"):

(a) The rights to lay, construct, install, maintain, improve, alter, inspect, repair, replace, relocate and operate an electric transmission and distribution substation, together with all appurtenances, equipment and facilities necessary or desirable for the purposes of transmitting and distributing electric power and for ancillary telecommunications and other communications purposes (whether or not related to the transmission or distribution of electric power), including, but not limited to, transformers, regulators, capacitors, wires, lines, poles, towers, structures, cables, guy wires, conduits, pipes, mains, manholes, handholes, meters, attachments, ground connections, equipment, fences, telecommunications equipment and all accessories desirable in connection with the foregoing, any of which may be located above or below ground (collectively, the "**Substation Facilities**"), on, under, over, upon, through and across that certain real property of Grantor situated in the County of _____, Michigan (the "**Substation Property**"), which Substation Property is more particularly described on Exhibit B, attached hereto and by this reference made a part hereof (the "**Substation Easement**"). The Substation Easement is designated as [_____] on that certain [plat of survey] entitled [_____], prepared by [_____] and dated [_____] (the "**Plat**"), a copy of which is attached hereto as Exhibit A, and by this reference made a part hereof, and to which Plat reference is hereby made for a more particular description of the Substation Easement.

(b) The non-exclusive rights of vehicular and pedestrian ingress and egress to and from the Substation Property and/or Mobile Substation Property (as defined below) and **[INSERT PUBLIC ROW]** on, under, over, upon, through and across a portion of certain real property of Grantor situated in the County of _____ , Michigan (the

"**Access Easement Property**"), which Access Easement Property is more particularly described on Exhibit C, attached hereto and by this reference made a part hereof (the "**Access Easement**"). The Access Easement is designated as [_____] on the Plat, and to which Plat reference is hereby made for a more particular description of the Access Easement.

(c) The right to enter upon and trim, cut, remove, destroy, or otherwise control all trees and vegetation located on that certain real property of Grantor situated in the County of _____, Michigan (the "**Protection Easement Property**"), which Protection Easement Property is more particularly described on Exhibit D attached hereto and by this reference made a part hereof and the right to trim, cut, remove, destroy, or otherwise control all trees and vegetation 80 feet outside of the fence and remove all hazard trees in accordance with the above (the "**Protection Easement**").

(d) The right to from time to time install, operate, maintain, and remove a mobile electric substation (the "**Mobile Substation**"), with associated electric lines and equipment and perimeter fencing, on, under, over, upon, through and across that certain real property of Grantor situated in the County of _____, Michigan (the "**Mobile Substation Property**"), which Mobile Substation Property is more particularly described on Exhibit E, attached hereto and by this reference made a part hereof, together with any temporary pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus, and all other equipment, appurtenances, associated fixtures, and facilities or incidental to or for the operation or protection thereof (the "**Mobile Substation Easement**").

The Substation Property, Access Easement Property, the Protection Easement Property, and Mobile Substation Property are hereinafter collectively referred to as the "**Easement Areas**".

2. Grantor and Grantee agree that this Agreement shall be for a term commencing on the Effective Date and terminating on the date where the Substation Facilities are decommissioned, and Grantee has constructed a new substation on certain other real property owned by Grantor. Upon completion of the decommissioning of the Substation Facilities and construction of the new substation on such certain other real property owned by Grantor, as evidenced by written notice from Grantee to Grantor, Grantee shall execute and record a termination and release of this Agreement in form mutually agreeable to Grantor and Grantee.

3. Grantor hereby agrees that among the easement rights conveyed to Grantee and the Grantee Parties are the rights to: (a) clear, remove and dispose of, from time to time, all natural or manmade obstructions in the Substation Property, Mobile Substation Property or on the Access Easement Property and adjacent to and outside the Easement Areas, as Grantee may deem necessary or desirable for the construction, installation, operation, maintenance, repair, relocation, replacement, improvement or alteration of the Substation Facilities; (b) have unobstructed and unrestricted ingress and egress over the Access Easement in order to provide unobstructed and unrestricted access to the Substation Facilities at all times; and (c) keep the Easement Areas clear of all buildings or structures, trees, stumps, roots and undergrowth and to trim or fell any tree

outside the Easement Areas which, in the opinion of Grantee, may constitute a hazard or endanger the safe or proper use or operation of the Access Easement or the Substation Facilities, including, but not limited to, any tree that in falling or being felled could come within fifteen (15) feet of the Easement Areas.

4. No buildings or other structures may be constructed in the Easement Areas without the prior written consent of Grantee, which consent may be withheld in Grantee's sole and absolute discretion. With the prior written consent of Grantee, in its sole and absolute discretion, Grantor, its lessees, successors, successors-in-title and assigns, may use the unenclosed portions of the Easement Areas for any purpose not inconsistent with the rights hereby granted (the "Permitted **Encroachments**"), provided that such Permitted Encroachments do not interfere with or endanger any of the Easements or other rights hereby granted, including, but not limited to, the construction, operation or maintenance of the Substation Facilities or Mobile Substation or ingress to and egress from the Easement Areas and/or or any part thereof. In no event shall Grantor or its lessees, invitees, licensees, successors, successors-in-title or assigns have the right to access any portion of the Substation Easement or any of the Substation Facilities or any portion the Mobile Substation or Mobile Substation Easement when a Mobile Substation is present on the Mobile Substation Easement. Grantee shall at all times have the right to cross or cut through any Permitted Encroachments and upon prior notice to Grantor, when reasonably possible under the circumstances, (except in emergency situations where no notice shall be required), to interrupt, prevent or alter the use thereof, for the purposes of constructing, maintaining, operating, repairing, altering or replacing the Substation Facilities, Mobile Substation, or any part thereof.

5. No delay or interruption by Grantee or Grantee Parties in the use or enjoyment of any right or easement hereby granted shall result in the loss, limitation or abandonment of any of the rights, title, interests, Easements or estates granted hereby. No rights, privileges or Easements granted under this Agreement are intended for public use (other than the use of the Access Easement, the Substation Easement, Protection Easement, and the Mobile Substation Easement by public safety, emergency and fire personnel and vehicles).

6. The Easements and other rights set forth in this Agreement shall be for the use, benefit and enjoyment of Grantee and Grantee Parties. This Agreement, each and all of its terms, conditions and provisions, and the Easements, rights, and privileges created hereby shall be binding upon and shall inure to the benefit of Grantee and Grantor and their respective successors, successors-in-title, and assigns. Grantor agrees that all of the Easements, rights and privileges set forth herein shall touch, concern, burden and run with the title to the Substation Property, Mobile Substation Property, Protection Easement Property, and the Access Easement Property.

7. Grantor hereby represents and warrants that (i) Grantor owns fee simple title to the Easement Areas; (ii) Grantor has a good and lawful right to grant and convey the Easements, rights and privileges granted hereunder; (iii) the Easement Areas are free from all leases, liens, mortgages and encumbrances which may prohibit, hinder or restrict the Easements, rights and privileges conveyed under this Agreement (other than liens and mortgages that are expressly subordinate to this Agreement); (iv) Grantor and its successors, successors-in-title and assigns will forever warrant and defend the title to the Easement Areas, including, but not limited to, the Easement Areas against the claims of all persons whatsoever; (v) Grantee and Grantee Parties shall have

quiet and peaceable possession, use and enjoyment of the Easement Areas; and (vi) Grantee and Grantor and its successors, successors-in-title and assigns shall execute and deliver such further assurances thereof as may be required.

8. The Substation Facilities and Mobile Substation shall at all times be and remain the property of Grantee. Grantee shall have the right to inspect, rebuild, repair, improve, relocate within the Substation Property and make such changes, alterations, substitutions, additions to or extensions of the Substation Facilities and Mobile Substation as Grantee may from time to time deem advisable.

9. Grantor hereby establishes that, as a covenant running with the title to the Substation Property and Mobile Substation Property and for the benefit of Grantee and Grantee Parties neither Grantor nor any of its successors, successors-in-title or assignor their respective lessees, tenants, customers, invitees, permittees or licensees shall file, assert or maintain, be a party to or permit to be filed, maintained or asserted any suit, cause of action, claim or proceeding of any kind or nature against any one (1) or more of the Grantee or Grantee Parties for any damages (including, but not limited to, indirect, punitive or consequential damages), liabilities, expenses, losses, costs, injuries (including death) or claims based on or in any way arising out of or related to the intrusion, transmittal or occurrence of any noises, sounds, sound waves, light, vibrations or similar effects from the Easements and/or the Substation Facilities or Mobile Substation on, under, over, upon, through, across and around the Substation Property or Mobile Substation Property, nor shall Grantor or any such occupant, user, lessee, tenant, customer, invitee, permittee or licensee of the Substation Property or Mobile Substation Property permit, bring or support any action to modify or change the current zoning or use permitted for the Substation Property or Mobile Substation Property without the prior written consent of Grantee, which consent may be withheld in Grantee's sole and absolute discretion.

10. Each Party (the "**Indemnifying Party**") shall defend, indemnify and hold harmless the other Party (each, an "**Indemnified Party**") from and against any and all third party (excluding affiliates of Indemnified Party) claims, litigation, actions, proceedings, losses, damages, liabilities, obligations, costs and expenses, including reasonable attorneys' fees, court costs and litigation expenses, for personal or property damage (collectively, "**Claims**") suffered or incurred by such Indemnified Party, as a result of a breach of this Agreement by the Indemnifying Party or the Indemnifying Party's negligent or willful misconduct in using the Easement Area. In no event shall either Party be liable to the other Party to the extent any Claim is caused by, arising from or contributed by the negligence or intentional misconduct of such other Party.

11. After the Effective Date, Grantee may, at Grantee's sole cost and expense, deliver to Grantor one or more requested changes to the terms, legal descriptions and/or location details of the Easements and/or Easement Areas as reflected herein. Upon such request, the Parties shall work in good faith to reach mutual agreement on any such changes, such agreement not to be unreasonably withheld, conditioned or delayed by either Party. The Parties shall execute an amendment to this Agreement in recordable form as may be reasonably necessary to memorialize any such mutually agreed upon changes. If reasonably required by Grantor, Grantor shall in accordance with applicable law and as Grantor may otherwise reasonably deem necessary, give notice to or seek approval (in form and substance reasonably acceptable to Grantor) from the

Federal Energy Regulatory Commission ("**Commission**") for any such changes as a condition to executing any such amendment, in which case, the Parties shall cooperate and work in good faith to give such notices or seek such approvals as soon as reasonably practicable. Upon the execution of any such amendment, Grantee shall cause the amendment to be recorded at Grantee's sole cost and expense.

12. This Agreement contains the entire agreement between the parties hereto relating to the subject matter hereof and supersedes all prior and contemporaneous negotiations, understandings and agreements, written or oral, between the parties hereto. This Agreement shall not be amended, modified or terminated and no waiver of any provision hereof shall be effective unless set forth in a written instrument executed with the same formality as this Agreement.

13. If any provision of this Agreement shall be unenforceable in whole or in part, such provisions shall be limited to the extent necessary to render the same valid, or shall be excised from this Agreement, as circumstances require, and this Agreement shall be construed as if such provision had been incorporated herein as so limited or as if such provision had not been included herein, as the case may be.

14. This Assignment may be executed in any number of counterparts, and it shall be sufficient that the signature of each party appears on one or more such counterparts. All counterparts shall collectively constitute a single agreement.

15. All questions with respect to the construction of this Agreement and the rights and liabilities of the parties hereto shall be determined in accordance with the applicable provisions of the laws of the State of Michigan.

16. Notwithstanding any other provision contained herein, Grantor, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. [_____], Commission orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantee.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, Grantor and Grantee have caused this Agreement to be executed by their respective duly authorized representatives as of the day and year first above written.

GRANTOR:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By:_____
Name:_____
Title:_____

STATE OF _____

CITY/COUNTY OF _____:

The foregoing Temporary Substation Easement Agreement was acknowledged before me this ____ day of _____, 2_____ by _____, _____ of Confluence Hydro, LLC, a Delaware limited liability company, who is personally known to me or has produced his/her drivers license as identification and who did take an oath.

[Notarial Seal]

_____
Notary Public
My Commission Expires:_____

[SIGNATURES CONTINUE ON THE FOLLOWING PAGE]

GRANTEE:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name: _____
Title: _____

STATE OF _____

CITY/COUNTY OF _____:

The foregoing Temporary Substation Easement Agreement was acknowledged before me this ____ day of _____, 2_____ by _____, _____ of Consumers Energy Company, a Michigan corporation, who is personally known to me or has produced his/her drivers license as identification and who did take an oath.

[Notarial Seal]

_____
Notary Public
My Commission Expires:_____

Exhibit A

The Plat

Exhibit B

Legal Description of the Substation Property

Exhibit C

Legal Description of the Access Easement Property

Exhibit D

Legal Description of the Protection Easement Property

Exhibit E

Legal Description of the Mobile Substation Property

ATTACHMENT 28

Non-Project Use of Project Lands Overview Maps

[CUI//CEII INFORMATION HAS BEEN REMOVED]

ATTACHMENT 29

Subscription and Verification

SUBSCRIPTION

This Application for Non-Capacity Related Amendment of License and Request for Non-Project Use of Project Lands (Application) for the Calkins Bridge Hydroelectric Project (FERC Project No. 785); Foote Project (FERC Project No. 2436); Alcona Project (FERC Project No. 2447); Mio Project (FERC Project No. 2448); Loud Project (FERC Project No. 2449); Cooke Project (FERC Project No. 2450); Rogers Project (FERC Project No. 2451); Hardy Project (FERC Project No. 2452); Five Channels Project (FERC Project No. 2453); Croton Project (FERC Project No. 2468); Webber Hydroelectric Project (FERC Project No. 2566); Tippy Project (FERC Project No. 2580); and Hodenpyl Project (FERC Project No. 2599) is executed in the:

State of Michigan
County of WEXFORD

By: Adam J. Monroe
Executive Director Hydro Operations
Consumers Energy Company
330 Chestnut St.
Cadillac, MI 49601
(231) 429-5033
adam.monroe@cmsenergy.com

who, being duly sworn, deposes and says that the contents of this Application are true to the best of his knowledge or belief and that he is authorized to execute this Application on behalf of Consumers Energy Company. The undersigned has signed this Application on this 30th day of October, 2025.

CONSUMERS ENERGY COMPANY

By: _____
Adam J. Monroe
Executive Director Hydro Operations

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the State of Michigan, this 30th day of October, 2025.

_____
(Notary Public)

HOLLIE L OLSON
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF WEXFORD
My Commission Expires December 11, 2031
Acting in the County of WEXFORD

My commission expires 12/11/2031.
/SEAL/

Attachments to this application are confidential and being provided under seal to the MPSC

ATTACHMENT E

Public Version
CUI//PRIV Information
Has Been Removed

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Docket No. EC26-___-000**
Confluence Hydro, LLC	**)**	
Confluence Hydro Alcona, LLC	**)**	
Confluence Hydro Calkins Bridge, LLC	**)**	
Confluence Hydro Cooke, LLC	**)**	
Confluence Hydro Croton, LLC	**)**	
Confluence Hydro Five Channels, LLC	**)**	
Confluence Hydro Foote, LLC	**)**	
Confluence Hydro Hardy, LLC	**)**	
Confluence Hydro Hodenpyl, LLC	**)**	
Confluence Hydro Loud, LLC	**)**	
Confluence Hydro Mio, LLC	**)**	
Confluence Hydro Rogers, LLC	**)**	
Confluence Hydro Tippy, LLC	**)**	
Confluence Hydro Webber, LLC	**)**	

JOINT APPLICATION FOR AUTHORIZATION
PURSUANT TO SECTION 203 OF THE FEDERAL POWER ACT AND
REQUEST FOR WAIVERS AND CONFIDENTIAL TREATMENT

Pursuant to section 203 of the Federal Power Act, as amended ("FPA"),[1] and Part 33 of the regulations of the Federal Energy Regulatory Commission ("FERC" or "Commission"),[2] Consumers Energy Company ("Seller"), Confluence Hydro, LLC ("Buyer"), Confluence Hydro Alcona, LLC ("Confluence Alcona"), Confluence Hydro Calkins Bridge, LLC ("Confluence Calkins Bridge"), Confluence Hydro Cooke, LLC ("Confluence Cooke"), Confluence Hydro Croton, LLC ("Confluence Croton"), Confluence Hydro Five Channels, LLC ("Confluence Five Channels"), Confluence Hydro Foote, LLC ("Confluence Foote"), Confluence Hydro Hardy, LLC ("Confluence Hardy"), Confluence Hydro Hodenpyl, LLC ("Confluence Hodenpyl"), Confluence Hydro Loud, LLC ("Confluence Loud"), Confluence Hydro Mio, LLC ("Confluence

[1] 16 U.S.C. § 824b (2018).

[2] 18 C.F.R. Part 33 (2025).

Mio"), Confluence Hydro Rogers, LLC ("Confluence Rogers"), Confluence Hydro Tippy, LLC ("Confluence Tippy"), and Confluence Hydro Webber, LLC ("Confluence Webber") (collectively, the "Confluence Project Companies" and, together with Seller and Buyer, "Applicants") hereby submit this application ("Application") for Commission authorization of the proposed transaction described below.

Seller is currently the sole owner and operator of the 13 hydropower generating assets described below (collectively, the "Project Assets"). Applicants submit this Application to request Commission authorization for a proposed transaction ("Transaction") involving (1) the sale by Seller of the Project Assets to Buyer, pursuant to a Purchase and Sale Agreement between Seller and Buyer dated September 3, 2025 ("Purchase Agreement"); and (2) the subsequent contribution of the Project Assets by Buyer to the Confluence Project Companies. As a result of the Transaction, Seller will no longer hold any ownership interests in the Project Assets.

As demonstrated herein, the Transaction will not have any adverse effect on competition, rates, or regulation and will not result in any cross-subsidization concerns.[3] Accordingly, the Transaction is consistent with the public interest and should be authorized by the Commission pursuant to FPA section 203.

I. COMMUNICATIONS

Communications regarding this Application should be addressed to the following individuals:[4]

[3] *See* 18 C.F.R. § 2.26.

[4] To the extent necessary, Applicants respectfully requests waiver of Rule 203(b)(3) of the Commission's regulations, 18 C.F.R. § 385.203(b)(3), so that a copy of any communications in this proceeding may be served on all persons listed above.

For Seller:

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For Buyer and Confluence Project Companies:

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Vincenzo Franco
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Washington, DC 20005
Tel: (301) 928-9136
vfranco@rockcreekenergygroup.com
jwood@rockcreekenergygroup.com

II. THE TRANSACTION

A. Parties to the Transaction

1. Seller and Its Relevant Affiliates and the Project Assets

Seller is a public utility that serves approximately 1.9 million electric customers and 1.8 million gas customers in Michigan's Lower Peninsula. Seller is wholly-owned by, and one of the two principal subsidiaries of, CMS Energy Corporation ("CMS Energy"), which is a publicly traded company.[5] Based on information contained in a quarterly report filed by The Vanguard Group Inc. ("Vanguard") for Q2 2025 pursuant to a blanket authorization under FPA section

[5] The other principal subsidiary of CMS Energy is NorthStar Clean Energy Company.

203(a)(2), Seller understands that investment funds held by Vanguard collectively held (in aggregate) 10 percent or greater of the publicly traded CMS Energy shares as of August 6, 2025.[6] Additionally, based on information contained in a quarterly report filed by BlackRock, Inc. ("BlackRock") for Q2 2025 pursuant to a blanket authorization under FPA section 203(a)(2), Seller also understands that investment funds held by BlackRock collectively held (in aggregate) 10 percent or greater of the publicly traded CMS Energy shares as of August 13, 2025.[7]

Seller owns and operates generating facilities and non-jurisdictional distribution facilities. The Commission granted Seller authority to sell electric energy and capacity at market-based rates in 1998.[8] Consumers Energy is a Category 2 Seller in the Central Region.

Seller is currently the sole owner and operator of the Projects Assets, which consist of the following 13 hydroelectric generating facilities licensed by the Commission under Part I of the FPA and located in the Midcontinent Independent System Operator, Inc. ("MISO") balancing authority area ("BAA"):

- **Alcona Project (FERC No. 2447)**. The Alcona Project is located on the Au Sable River in northeastern Michigan, approximately three miles west of Glennie, Michigan. The Alcona Project was completed in 1924. The two turbine-generator units have a combined capacity of approximately 8.0 MWs.

- **Calkins Bridge Project (FERC No. 785)**. The Calkins Bridge Project is located on the Kalamazoo River in Allegan County, approximately six miles northwest of the City of Allegan. The Calkins Bridge Project was completed in 1936. The three units of have a combined rated capacity of approximately 2.55 MWs.

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[6] *See* Quarterly Filing for Q2 2025 of The Vanguard Group, Inc., Docket No. EC19-57-002 (filed Aug. 6, 2025).

[7] *See* Quarterly Filing for Q2 2025 of BlackRock, Inc., Docket Nos. 16-77-004 and ECF25-12-000 (filed Aug.13, 2025).

[8] *Consumers Energy Co.*, 85 FERC ¶ 61,121 (1998).

- **Cooke Project (FERC No. 2450)**. The Cooke Project is located on the Au Sable River in Iosco County, downstream from the Five Channels Project, and approximately twelve miles west of Oscoda, Michigan. The project was completed in 1911. The three generating units have a combined capacity of approximately 7.5 MWs.

- **Croton Project (FERC No. 2468)**. The Croton Project is located on the Muskegon River, near Croton Township. The Croton Project construction started in 1904, with the first two generating units coming online in 1907. The second two units were added in 1915. The four units have a total capacity of approximately 9.0 MWs.

- **Five Channels Project (FERC No. 2453)**. The Five Channels Project is located on the Au Sable River, approximately 17 miles west of Oscoda in Iosco County, Michigan, upstream of the Cooke Project impoundment. The Five Channels Project, completed in 1912, has two generating units with a combined capacity of approximately 6.0 MWs.

- **Foote Project (FERC No. 2436)**. The Foote Project is located on the Au Sable River in Iosco County, Michigan, approximately 6 miles west of Oscoda. The Foote Project was completed in 1918. The three turbine-generator units have a combined capacity of approximately 9.0 MWs.

- **Hardy Project (FERC No. 2452)**. The Hardy Project is located on the Muskegon River near Oxbow, Michigan. The Hardy Project was completed in 1931 and is downstream of the Rogers Project and upstream of the Croton Project. The Hardy Project's three generating units have a combined capacity of approximately 32.5 MWs.

- **Hodenpyl Project (FERC No. 2599)**. The Hodenpyl Project is on the Manistee River, approximately 23 miles northwest of Cadillac, Michigan. The Hodenpyl Project is approximately 12 river miles upstream of the Tippy Project. The dam was completed in 1925 and has a combined rated capacity of approximately 18.0 MWs.

- **Loud Project (FERC No. 2449)**. The Loud Project is located on the Au Sable River in Iosco County, Michigan, upstream of the Five Channels Project. The Loud Project was completed in 1913. The two turbine-generators have a combined capacity of approximately 4.0 MWs.

- **Mio Project (FERC No. 2448)**. The Mio Project is in Oscoda County, Michigan on the Au Sable River near the town of Mio. The Mio Project was completed in 1916. Its two generating units have a combined capacity of approximately 5.0 MWs.

- **Rogers Project (FERC No. 2451)**. The Rogers Project is located on the Muskegon River, approximately six miles south of Big Rapids, Michigan. Constructed in 1905, and rebuilt after a fire in 1922, the Rogers Project has four generating units that have a combined capacity of approximately 6.72 MWs.

- **Tippy Project (FERC No. 2580)**. The Tippy Project is located on the Manistee River, approximately 19 miles east of Manistee, Michigan, and approximately 12 river miles downstream of the Hodenpyl Project. The Tippy Project was completed in 1918 and has three generating units that have a combined capacity of approximately 20.0 MWs.

- **Webber Project (FERC No. 2566)**. The Webber Project is located on the Grand River near Ionia, Michigan. Constructed in 1907, the Webber Project. Its two generating units have a combined capacity of approximately 3.3 MWs.

2. Buyer, the Confluence Project Companies, and Their Relevant Affiliates

Buyer is a special purpose entity established for the purpose of acquiring the Project Assets. Prior to the consummation of the Transaction, Buyer will not directly or indirectly own, operate, or control any electric generation or transmission facilities or essential inputs to electricity products or electric power production, as defined in 18 C.F.R. §§ 33.4 and 35.36. Prior to the consummation of the Transaction, Buyer will submit an application requesting Commission authorization to make sales of energy, capacity, and ancillary services at market-based rates. Following the Transaction, Buyer will sell all of the energy and capacity from the Project Assets to Seller pursuant to the Renewable Energy Purchase Agreement by and between Buyer and Seller, dated as of September 3, 2025 ("REPA").

Each of the Confluence Project Companies is a special purpose entity established for the purpose of owning and operating its respective Project Asset. Specifically, Confluence Alcona was formed to own and operate the Alcona Project; Confluence Calkins Bridge was formed to own and operate the Calkins Bridge Project; Confluence Cooke was formed to own and operate the Cooke Project; Confluence Croton was formed to own and operate the Croton Project; Confluence Five Channels was formed to own and operate the Five Channels Project; Confluence Foote was formed to own and operate the Foote Project; Confluence Hardy was formed to own and operate the Hardy Project; Confluence Hodenpyl was formed to own and operate the Hodenpyl Project; Confluence Loud was formed to own and operate the Loud

Project; Confluence Mio was formed to own and operate the Mio Project; Confluence Rogers was formed to own and operate the Rogers Project; Confluence Tippy was formed to own and operate the Tippy Project; and Confluence Webber was formed to own and operate the Webber Project.

Prior to consummation of the Transaction, each Confluence Project Company intends to certify as a qualifying small power production facility ("QF") under the Public Utility Regulatory Policies Act of 1978, as amended ("PURPA"), for its respective Project Asset. Additionally, prior to the consummation of the Transaction, Confluence Hydro Hardy will submit an application requesting Commission authorization to make sales of energy, capacity, and ancillary services at market-based rates. Each Confluence Project Company will sell all of the energy and capacity from its respective Project Asset to Buyer, which in turn will sell the energy and capacity to Seller pursuant to the REPA.

Each Confluence Project Company is a wholly owned direct subsidiary of Buyer, which is a wholly owned direct subsidiary of Confluence Hydro HoldCo, LLC. Confluence Hydro HoldCo, LLC is owned by Confluence Hydro Parallel Holdings, LLC ("Confluence Hydro Parallel Holdings") and Hull Street Energy Partners III, L.P. ("HSEP III"). Confluence Hydro Parallel Holdings is a wholly owned direct subsidiary of Hull Street Energy Partners III (Parallel), L.P. ("HSEP III Parallel"). HSEP III and HSEP III Parallel are managed and controlled by their general partner, HSE Partners III GP, LP ("HSE Partners III GP"), which owns all of the general partner interests in HSEP III and HSEP III Parallel. HSE Partners III GP is managed and controlled by its general partner, Hull Street Energy, LLC ("HSE"). Through HSE Partners III GP, HSE has sole responsibility and authority for the management and control of HSEP III and HSEP III Parallel.

The limited partner interests in HSEP III and HSEP III Parallel are owned by passive limited partner investors ("HSEP III LP Investors"), who lack the ability to manage or control HSEP III or HSEP III Parallel. However, the HSEP III LP Investors have the right to participate in a super-majority vote to remove HSE Partners III GP as general partner without cause. The Commission has held that upstream limited partner investors of an affiliate of Buyer that had similar rights owned voting securities, and therefore limited partners that owned 10 percent or more of the limited partnership interests were considered upstream affiliates of the public utility.[9] The only HSEP III LP Investor that owns 10 percent or more of the limited partnership interests in HSEP III and HSEP III Parallel is the Comptroller of the State of New York, as Trustee of the New York State Common Retirement Fund. The New York State Common Retirement Fund is a governmental entity that does not have any owners or voting securities and therefore does not have any upstream affiliates. Other than with respect to Buyer and other public utilities owned by funds managed and controlled by HSE, which are already identified as affiliates of Buyer herein, the New York State Common Retirement Fund is not affiliated with, nor holds or controls, directly or indirectly with the power to vote, voting or equivalent securities in any electric generation facility, electric transmission facility, or any inputs to electric power production or electricity products, as defined in 18 C.F.R. §§ 33.4 and 35.36, in the United States. Furthermore, the New York State Common Retirement Fund has not appointed any person to the position of officer or director of any public utility or any company that owns, directly or indirectly, any electric generation facility, electric transmission facility, or any inputs to electric power production or electricity products, as defined in 18 C.F.R. §§ 33.4 and 35.36, in the United States.

[9] *EF Oxnard LLC*, 189 FERC ¶ 61,010 (2024), *order on reh'g*, 190 FERC ¶ 61,040 (2025).

HSE is a private equity firm headquartered in Bethesda, Maryland that is primarily involved in the development and acquisition of, and investment in, energy infrastructure assets, and related ownership, operation, and management of these assets, including electric generation. HSE's energy-related affiliates are described in *Exhibit B* to this Application. HSE is not currently affiliated with any generation facilities within the MISO BAA, the relevant market for the Transaction.

HSE is not affiliated with any entity that owns or controls any electric transmission facilities in the United States, except for limited and discrete equipment necessary to interconnect individual generating facilities to the transmission grid. Other than as described in this Application, HSE is not affiliated with any entity that owns or controls any inputs to electricity products or inputs to electric power production, as those terms are defined in 18 C.F.R. §§ 33.4 and 35.36.[10] HSE is not affiliated with any public utility with a franchised electric service territory.

HSE is currently controlled by Sarah Wright, an individual.[11] Except with respect to facilities described in this Application, Ms. Wright is not affiliated with, nor holds or controls, directly or indirectly with the power to vote, voting or equivalent securities in any electric generation facility, electric transmission facility, or any essential input to electricity products or electric power production, as defined in 18 C.F.R. §§ 33.4 and 35.36.

Ms. Wright is a passive investor with respect to four fully committed run-of-river hydroelectric generation facilities in Ware, Massachusetts (each of which is a qualifying facility under PURPA), having a combined capacity of 2.4 MW, and she has no control over the day-to-

[10] 18 C.F.R. § 35.36.

[11] Ms. Wright is the managing member of HSE and has sole control and decision-making authority with respect to HSE.

day management and business operations of these facilities. Ms. Wright's passive interests in these facilities do not constitute voting securities, consistent with the passive interests in *AES Creative Resources, L.P.*[12] Other than through HSE and its affiliates, Ms. Wright is not employed by, does not hold the position of officer or director of, and is not a non-independent member of the board of, a public utility or a holding company of a public utility in the United States.

B. The Transaction

Pursuant to the Transaction, (1) Buyer will directly acquire the Project Assets from Seller, and (2) subsequently, Buyer will contribute the Project Assets to the Confluence Project Companies. Upon consummation of the Transaction, Buyer will acquire from the Confluence Project Companies all of the energy and capacity from the Project Assets, which Buyer will then sell to Seller pursuant to the REPA.

As a result of the Transaction, Buyer will indirectly own the Project Assets, and each Confluence Project Company will be the sole direct owner of its respective Project Asset, as described in Part II(A)(2). Seller will not retain any ownership interests in, and will no longer be affiliated with, the Project Assets following the consummation of the Transaction.

The details of the Transaction are set forth in the Purchase Agreement, which is provided as confidential *Exhibit I*. Applicants request confidential treatment of the Purchase Agreement because it contains sensitive commercial and financial information that is not publicly available. As described below, the Transaction will have no adverse effect on competition, rates, or regulation, and does not raise any cross-subsidization issues. Accordingly, Applicants request that the Commission issue an order approving the Transaction as described herein.

[12] 129 FERC ¶ 61,239 at P 26 (2009).

C. Description of the Jurisdictional Facilities Affected by the Transaction

The jurisdictional facilities that will be affected by the Transaction consist of the limited and discrete interconnection facilities associated with the Project Assets, and any related agreements, books, and records.

III. REQUEST FOR PRIVILEGED AND CONFIDENTIAL TREATMENT

Pursuant to 18 C.F.R. §§ 33.8 and 388.112, Applicants request privileged and confidential treatment of *Exhibit I* and the proposed accounting entries submitted as *Attachment 2*, because each contains sensitive commercial and financial information that is privileged or confidential and not publicly available. Such information is non-public and is exempt from the mandatory public disclosure requirements of the Freedom of Information Act ("FOIA").[13] A proposed form of protective agreement that is consistent with the Commission's model protective agreement is attached to this Application as *Attachment 3*.

IV. REQUEST FOR FPA SECTION 203 APPROVAL

A. Applicability of FPA Section 203

Applicants seek Commission authorization for the Transaction under FPA sections 203(a)(1)(A), 203(a)(1)(B), and 203(a)(1)(D). Seller is a public utility and will dispose of facilities subject to the jurisdiction of the Commission. Buyer will be a public utility at the time the Transaction is consummated and will acquire "existing generation facilities." In addition, the contribution of the Project Assets from Buyer to the Confluence Project Companies will result in the disposition of jurisdictional facilities by Buyer and the acquisition of an "existing generation

[13] 5 U.S.C. § 552 (2018)*; see also Food Mktg. Inst. v. Argus Leader Media*, 139 S.Ct. 2356, 2364-66 (2019) (rejecting the "substantial competitive harm" requirement articulated in *National Parks & Conservation Ass'n v. Morton*, 498 F.2d 765 (D.C. Cir. 1974), and stating that, "where commercial or financial information is both customarily and actually treated as private by its owner and provided to the government under an assurance of privacy, the information is 'confidential'" and thus exempt from disclosure under FOIA).

facility" by Confluence Hydro Hardy, which will be a public utility at the time the Transaction is consummated.[14]

B. Satisfaction of FPA Section 203 Criteria

Section 203(a) of the FPA provides that the Commission will approve jurisdictional transactions that are "consistent with the public interest." As explained in the *Merger Policy Statement* and in Order Nos. 642 and 669,[15] the Commission examines three factors in analyzing whether a proposed transaction is consistent with the public interest: (1) the effect on competition; (2) the effect on rates; and (3) the effect on regulation. In addition, section 203 requires a showing that a proposed transaction will not result in cross-subsidization of a non-utility associate company or pledge or encumbrance of utility assets for the benefit of an associate company. As explained below, the Transaction is consistent with the public interest, does not result in cross-subsidization, and should be approved.

C. No Adverse Effect on Competition

1. The Transaction Does Not Raise Horizontal Market Power Concerns

The Transaction does not raise any horizontal market power concerns. Section 33.3(a)(2)(i) of the Commission's regulations provides that a horizontal competitive screen

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[14] Buyer and the Confluence Project Companies are not currently public utilities under the FPA. However, as discussed herein, Buyer and the Confluence Project Companies will be public utilities by the time the Transaction is consummated. While the Confluence Project Companies will be QFs, Confluence Hydro Hardy has a generation capacity in excess of 30 MW and therefore is not exempt from section 203 of the FPA. *See* 18 C.F.R. § 292.601.

[15] *Inquiry Concerning the Commission's Merger Policy Under the Federal Power Act: Policy Statement*, Order No. 592, FERC Stats. & Regs. ¶ 31,044 (1996) ("Merger Policy Statement"), *order on reconsideration*, Order No. 592-A, 79 FERC ¶ 61,321 (1997); *Revised Filing Requirements Under Part 33 of the Commission's Regulations*, Order No. 642, 93 FERC ¶ 61,164 (2000), *order on reh'g*, Order No. 642-A, 94 FERC ¶ 61,289 (2001) (implementing the policies stated in the Merger Policy Statement); *Transactions Subject to FPA Section 203*, Order No. 669, 113 FERC ¶ 61,315 at P 194 (2005), *order on reh'g*, Order No. 669-A, 115 FERC ¶ 61,097 (2006), *order on reh'g and clarification*, Order No. 669-B, 116 FERC ¶ 61,076 (2006).

analysis is not required if the applicants affirmatively demonstrate "that the merging entities do not currently conduct business in the same geographic markets or that the extent of the business transactions in the same geographic markets is *de minimis*."[16] Neither Buyer nor any of its affiliates, including the Confluence Project Companies, owns any generation facilities in the MISO BAA, which is the relevant geographic market. Neither Seller and Buyer nor Seller and the Confluence Project Companies conduct business in the same relevant geographic market. Therefore, the Transaction will not result in any new affiliation or combination of electric generation assets that could have an impact on competition in the MISO BAA. Because Buyer and the Confluence Project Companies are new market entrants in the MISO BAA, the Transaction will not cause an increase in overall market concentration and is expected to result in either no change or a decrease in overall market concentration.[17] Additionally, following the Transaction's consummation, Seller will take the energy and capacity from the Project Assets pursuant to the REPA and, therefore, the Transaction will not result in a change in control over the Project Assets' output.

Following the Transaction, Buyer, the Confluence Project Companies, and their affiliates will have a *de minimis* presence in the relevant market. The Project Assets aggregate to approximately 131.57 MW. Compared to the approximately 124,170 MW of installed capacity in the MISO BAA,[18] the post-transaction market share of Buyer, the Confluence Project Companies, and their affiliates will be approximately 0.11 percent of the installed capacity in the

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[16] 18 C.F.R. § 33.3(a)(2)(i).

[17] *See Pedricktown Cogeneration Ltd. P'ship*, 98 FERC ¶ 62,217 (2002) (approving transaction without requiring competitive screen analysis where acquiror did not conduct business in the relevant market and would be a new market entrant); *Griffith Energy LLC*, 171 FERC ¶ 62,023 (2020) (same).

[18] *See* MISO Annual Electric Balancing Authority Area and Planning Area Report for Year Ending December 31, 2024 (filed May 30, 2025).

MISO BAA following consummation of the Transaction. Such a post-transaction market share is consistent with, and well below, the levels the Commission has found to be *de minimis*.[19] Accordingly, the Transaction does not raise horizontal market power concerns.

2. The Transaction Does Not Raise Vertical Market Power Concerns

The Transaction also does not raise any vertical market power concerns. The Transaction does not involve any transmission facilities, except for the limited and discrete equipment necessary to interconnect individual generating facilities to the transmission grid, and does not involve upstream inputs to electricity products. With one exception addressed below, none of Buyer, the Confluence Project Companies, or their affiliates owns or controls electric transmission facilities (other than facilities used to interconnect generation facilities with the transmission grid) or upstream inputs to electricity products. The one exception is that Pittsfield Generating Company, L.P. ("Pittsfield Generating"), a subsidiary of HSE and its affiliates, owns BFALP-GP, LLC, which is the general partner of Berkshire Feedline Acquisition Limited Partnership, which in turn owns a 6.2-mile lateral pipeline in Massachusetts that serves Pittsfield Generating's generation facility. However, the Commission has found that the combination of intrastate natural gas storage or distribution facilities and electric generation does not raise market power concerns.[20] Moreover, the lateral is operated by an unaffiliated third party,

[19] *See, e.g.*, *ALLETE, Inc.*, 189 FERC ¶ 61,215 at P 33 (2024) (agreeing that the overlap was *de minimis* where the post-transaction market shares did not exceed 2.2 percent); *Algonquin Power Co.*, 189 FERC ¶ 61,214 at P 65 (2024) (agreeing that the overlap was *de minimis* where the post-transaction market share was 1.1 percent); *Allegheny Energy Supply Co., LLC*, 129 FERC ¶ 62,134 at 64,425 (2009) (determining that a post-transaction share of approximately 5.9 percent of the installed capacity in PJM was *de minimis*); *MACH Gen, LLC*, 127 FERC ¶ 62,166 at 64,464 & n.11 (2009) (determining that a post-transaction share of approximately 5.3 percent of the installed capacity in the ISO New England, Inc. market was *de minimis*).

[20] *See, e.g.*, *Exelon Corp.*, 138 FERC ¶ 61,167 at P 113 (2012) (finding that the proposed combination of generation and natural gas distribution assets would not harm competition because applicants will only control a relatively small amount of natural gas deliverable capacity and storage capacity); *Wis. Energy*

Berkshire Gas Company, which also has capacity on the lateral, and that will continue to be the case following the consummation of the Transaction. Further, the lateral is not proximate to MISO or the Project Assets. Additionally, Pittsfield Generating has affirmatively stated that neither it nor its affiliates have erected barriers to entry into the relevant market and will not erect barriers to entry into the relevant market.[21]

In conclusion, the Transaction raises no vertical competitive concerns, and no vertical competitive analysis screen is necessary.

D. No Adverse Effect on Rates

The Transaction will have no adverse effect on rates. The Commission has explained that its primary concern regarding the effects of a transaction on rates is the protection of transmission customers and wholesale ratepayers.[22] The Commission also has found that the sale of energy, capacity, and ancillary services at market-based rates does not raise concerns about adverse impacts on rates.[23] Seller currently makes sales of energy, capacity and ancillary services from the Project Assets at market-based rates. Buyer and Confluence Hardy will obtain

Corp., 151 FERC ¶ 61,015 at P 47 (2015) (finding that the merger would not give applicants the ability to withhold natural gas transportation to disadvantage rival generation in part because state regulation of applicants' gas distribution systems limits their ability to withhold natural gas from generators); *Nat'l Grid plc*, 117 FERC ¶ 61,080 at P 30 (2006) (explaining that for a merger to create or enhance vertical market power, both the upstream and downstream markets must be highly concentrated) (citing Order No. 642, FERC Stats. & Regs. ¶ 31,111 at 31,911); *Mkt.-Based Rates for Wholesale Sales of Elec. Energy, Capacity & Ancillary Servs. by Pub. Utils.*, Order No. 697, 119 FERC ¶ 61,295 at P 446 (2007) (adopting a "rebuttable presumption that sellers cannot erect barriers to entry with regard to ownership or control of, or affiliation with any entity that owns or controls . . . intrastate natural gas storage or distribution facilities"), (subsequent history omitted).

[21] *See Pittsfield Generating Co., L.P.*, Notice of Non-Material Change in Status, Docket No. ER18-213-001 (filed July 30, 2018).

[22] *See, e.g.*, *New England Power Co.*, 82 FERC ¶ 61,179 at 61,659, *order on clarification & reh'g*, 83 FERC ¶ 61,275 (1998), *aff'd sub nom. Town of Norwood v. FERC*, 202 F.3d 392 (2000); *Merger Policy Statement*, FERC Stats. & Regs. ¶ 31,044 at 30,123.

[23] *See, e.g.*, *Ameren Energy Generating Co.*, 145 FERC ¶ 61,034 at PP 83-88 (2013).

market-based rate authorization prior to consummation of the Transaction and will sell energy, capacity, and certain ancillary services at market-based rates.[24] Moreover, the REPA, pursuant to which Buyer will sell energy and capacity from the Project Assets, is subject to approval by the Michigan Public Service Commission. In addition, the Transaction does not involve transmission rates or transmission customers. Accordingly, the Transaction will have no adverse effect on wholesale ratepayers or transmission customers.

E. No Impairment of the Effectiveness of State or Federal Regulation

The Transaction will not have an adverse impact on regulation at the federal or state level. Seller will remain a public utility subject to both Commission and state jurisdiction. The Commission will have jurisdiction over Buyer and the Confluence Project Companies as public utilities, and the Commission's existing jurisdiction over the Project Assets under Part I of the FPA will not change.

F. No Potential for Cross-Subsidization

Section 203(a)(4) of the FPA requires the Commission to determine whether a transaction will "result in cross-subsidization of a non-utility associate company or the pledge or encumbrance of utility assets for the benefit of an associate company" and, if so, whether the cross-subsidy, pledge, or encumbrance will be consistent with the public interest.[25] The

[24] The sales energy and capacity from the Confluence Project Companies (other than Confluence Hardy) to Buyer will be exempt from sections 205 and 206 of the FPA because those Project Assets will be QFs with a generating capacity under 20 MW. *See* 18 C.F.R. § 292.601.

[25] An associate company is any company in the same utility holding company system. A non-utility associate company is any associate company in a holding company system other than a public utility that has wholesale or retail customers served under cost-based rate regulation. *See* 18 C.F.R. § 33.1(b)(2) and (4).

Commission has stated that the concern over cross-subsidization is principally a concern over the effect of a proposed transaction on captive ratepayers.[26]

The Commission has identified certain categories of "safe harbor" transactions that are unlikely to raise cross-subsidization concerns.[27] The Commission has stated that "[w]here a franchised public utility transacts only with nonaffiliated entities, the potential for inappropriate cross-subsidization of a non-utility associate company or the pledge or encumbrance of utility assets for the benefit of an associate company generally is not present. Therefore, compliance with Exhibit M could be satisfied with a showing that a public utility transacts only with nonaffiliated entities."[28]

Because the Transaction is between nonaffiliated entities and does not involve the transfer of assets between a franchised public utility and an affiliated public utility, the Transaction qualifies for the safe harbor.

In Order Nos. 669, 669-A, and 669-B, the Commission established a four-part test that applicants must satisfy in order to demonstrate that the proposed transaction will not result in improper cross-subsidization, or the pledge or encumbrance of utility assets of a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities. Under this test, the Commission examines whether, at the time of the transaction or in the future, the proposed transaction will result in: (i) any transfer of facilities between a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission

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[26] Order No. 669 at P 167.

[27] *Supplemental Policy Statement*, 120 FERC ¶ 61,060 at P 16.

[28] *Id*. P 19.

facilities, and an associate company; (ii) any new issuance of securities by a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, for the benefit of an associate company; (iii) any new pledge or encumbrance of assets of a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, for the benefit of an associate company; or (iv) any new affiliate contract between a non-utility associate company and a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, other than non-power goods and services agreements subject to review under sections 205 and 206 of the FPA. None of these circumstances is present with respect to the Transaction.

Consistent with the requirements of Order Nos. 669, 669-A, and 669-B, Applicants include verifications regarding each of these factors in *Exhibit M* to this Application, which relates to the time of the Transaction as well as the future and is based on facts and circumstances known or reasonably foreseeable to Applicants.[29] Accordingly, the Transaction does not raise any cross-subsidization concerns.

V. INFORMATION AND EXHIBITS REQUIRED BY SECTION 33.2 OF THE COMMISSION'S REGULATIONS

In accordance with section 33.2 of the Commission's regulations, Applicants provide the following information:

(a) Names and principal business offices of Applicants

Consumers Energy Company
One Energy Plaza

[29] *See* Order No. 669 at P 169 (stating that such verifications may be accepted in lieu of any other explanation with respect to cross-subsidization and encumbrance concerns).

Attn: Legal Department
Jackson, MI 49201

Confluence Hydro, LLC
Confluence Project Companies
c/o Hull Street Energy, LLC
4747 Bethesda Avenue, Suite 1220
Bethesda, MD 20814

(b) Names and addresses of the persons authorized to receive notices and communications

The names and addresses of persons authorized to receive notices and communications with respect to this Application are identified in Part I, above.

(c) Description of Applicants, including

(1) Exhibit A – Business activities of Applicants

The business activities of Applicants are described in Part II, above.

Accordingly, Applicants request a waiver of the requirement to file *Exhibit A*.

(2) Exhibit B – Energy subsidiaries and energy affiliates and their business activities

Exhibit B includes Buyer's asset appendix generated from the Commission's relational database for market-based rate sellers. Because Seller will no longer own any interest in the Project Assets following the Transaction, Applicants request a waiver of the requirement to include any energy affiliates of Seller in *Exhibit B*.

(3) Exhibit C – Organizational Charts

Simplified pre-Transaction and post-Transaction organizational charts are included in *Exhibit C.*

(4) Exhibit D – Business agreements

The Transaction involves no jurisdictional arrangements among the parties apart from those described in Part II above. There are no strategic alliances, joint ventures, tolling arrangements, or other proposed business arrangements to which Applicants are a party that are affected by the Transaction, other than as described herein. Therefore, Applicants request a waiver of the requirement to file *Exhibit D*.

(5) Exhibit E – Common officers or directors

There are no common officers or directors between Seller and its affiliates, on the one hand, and Buyer, the Confluence Projects Companies, and their affiliates, on the other hand. To the extent that any FPA-jurisdictional interlocking appointment is to be made following consummation of the Transaction, the appropriate filings under Part 45 of the Commission's regulations will be submitted. Accordingly, Applicants request a waiver of the requirement to file *Exhibit E*.

(6) Exhibit F – Description of customers

Buyer and the Confluence Project Companies will not have any wholesale customers prior to the consummation of the Transaction, and Seller sells power at wholesale pursuant to its market-based rate tariff on file with the Commission. These sales are reported in the Electric Quarterly Reports required to be filed with the Commission. Accordingly, Applicants request a waiver to provide this information in a separate *Exhibit F*. Also, Applicants request a limited waiver of the information requirements of 18

C.F.R. § 33.2(c)(6), to the extent waiver may be deemed necessary, to list customers of Buyer and the Confluence Project Companies' public utility affiliates, because that information is not necessary or relevant to evaluating the Transaction and would be unduly burdensome to provide.

(d) Exhibit G – Description of jurisdictional facilities

The jurisdictional facilities affected by the Transaction are described in Part II above and *Exhibit G*.

(e) Exhibit H – Narrative descriptions of the Transaction

A description of the Transaction is set forth in Part II above, which includes identification of the parties, description of the jurisdictional facilities associated with or affected by the Transaction, and the effect of the Transaction on such jurisdictional facilities. Accordingly, Applicants request a waiver of the requirement to file *Exhibit H*.

(f) Exhibit I – Contracts related to the proposed Transaction

The Transaction will be effectuated pursuant to the Purchase Agreement, which is attached as *Exhibit I*. Pursuant to 18 C.F.R. §§ 33.8 and 388.112, Applicants request confidential and privileged treatment of *Exhibit I*, as discussed in Part III above. To the extent necessary, Applicants also request a waiver of the requirements of 18 C.F.R. § 33.2(f) as to exhibits and schedules to the Purchase Agreement and other incidental contracts and written instruments that may be entered into by the parties, none of which will be inconsistent with the Purchase Agreement contained in *Exhibit I* or the description of the Transaction set forth in this Application.[30]

[30] *See EIF Berkshire Holdings, LLC*, 116 FERC ¶ 61,273 (2006).

(g) Exhibit J – Consistency of the Transaction with the public interest

As discussed above in Part II, the facts provided in this Application are sufficient to demonstrate that the Transaction will be in the public interest. Accordingly, Applicants request a waiver of the requirement to file *Exhibit J*.

(h) Exhibit K – Maps

A map of the Projects Assets is attached as *Exhibit K*. Applicants respectfully request a waiver of the requirement of Section 33.2(h) of the Commission's regulations[31] to provide a map of the physical property to the extent it would require the submission of additional information in *Exhibit K*.

(i) Exhibit L – Regulatory orders

Applicants identify in *Exhibit L* the other regulatory bodies required to issue licenses, orders, or other approvals in connection with the Transaction.

(j) Exhibit M – Cross-subsidization

The facts demonstrating that the Transaction will not result in cross-subsidization of a non-utility associate company or pledge or encumbrance of utility assets for the benefit of an associate company are provided in Part IV(F) of this Application. The Applicants additionally submit *Exhibit M* with this Application to confirm that the Transaction will not result in impermissible cross-subsidization.

VI. INFORMATION ON PROPOSED ACCOUNTING ENTRIES REQUIRED BY SECTION 33.5 OF THE COMMISSION'S REGULATIONS

Proposed accounting entries for Consumers Energy are attached hereto as confidential *Attachment 2*.

[31] 18 C.F.R. § 33.2(h).

Buyer and the Confluence Project Companies are not required to maintain their books of account in accordance with the Commission's Uniform System of Accounts.

VII. VERIFICATIONS

Signed verifications by persons having authority with respect thereto and having knowledge of the matters set forth in this Application are included as *Attachment 1*.

VIII. CONCLUSION

For the reasons set forth above, Applicants request that the Commission: (i) issue an order approving the Transaction; (ii) grant the waivers requested herein; and (iii) grant Applicants' request for confidential treatment of *Exhibit I* and *Attachment 2*.

Respectfully submitted,

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Dated: October 30, 2025

Applicants have requested a waiver of the requirement to file

Exhibits A, D, E, F, H, J

Exhibit B

U.S. Energy Affiliates

The energy affiliates of Buyer and the Confluence Project Companies are provided in a separate Excel file in the format generated by the relational database for market-based rate sellers developed and administered by FERC pursuant to the requirements set forth in *Data Collection for Analytics and Surveillance and Market-Based Rate Purposes*, Order No. 860, 84 Fed. Reg. 36,390 (July 26, 2019), 168 FERC ¶ 61,039 (2019), *order on reh'g*, Order No. 860-A, 170 FERC ¶ 61,129 (2020). For this purpose, Applicants have utilized the definition of "subsidiary" set forth in FERC's regulations at 18 C.F.R. 366.1 and the definition of "affiliate" set forth in FERC's regulations at 18 C.F.R. 35.36(a)(9).

ID	Filing Entity	Entity ID	Entity ID Ty	Asset Type Name	Balancing Authority Location	Region	Explanatory Notes
5635	Bayswater	GID0001391	GID	Intrastate Pipeline	ISNE	NE	6.2-mile, 12-inch diameter natural gas pipeline lateral

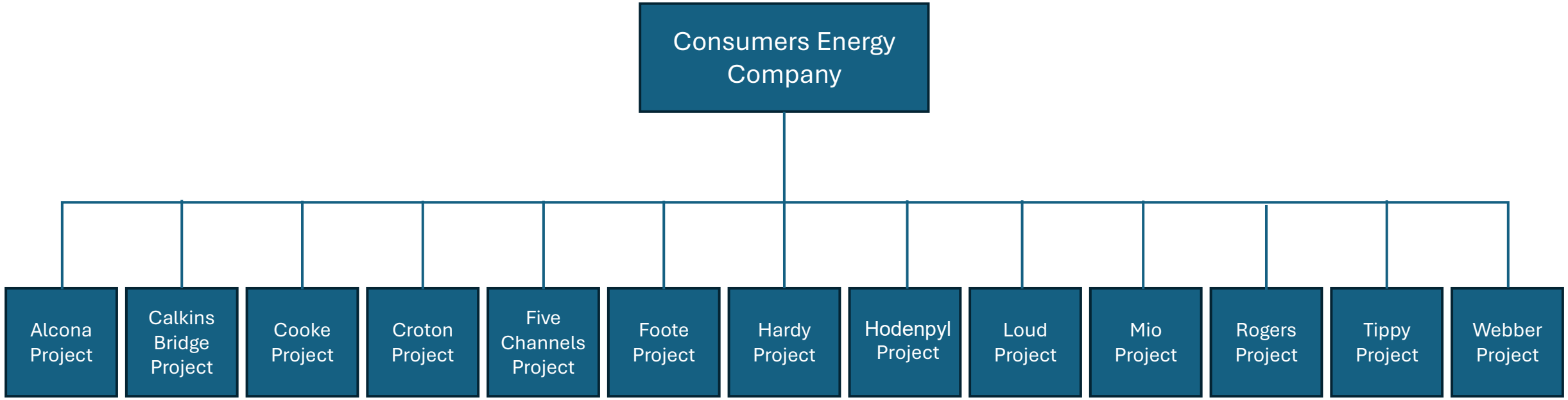
ID	Filing Entity	Entity ID	Counterpar	Amount of	Market / B	Market / B	Geographic	Plant Code	Generator	Unit Code	PPA Agree	Start Date(mo/da/yr)	End Date(mo/da/yr)	Type of PP	End Note Number (Enter text in End Notes Sheet)
34755	Bayswater Peaking Fac	MPH Rocka		52.8	NYLI			55699	1		B-MPH Agr	6/28/2020	6/29/2030	Sale	
34756	Jamaica Bay Peaking F	MPH Rocka		53.9	NYLI			56141	2		JB-MPH Ag	6/28/2020	6/29/2030	Sale	
34757	MPH Rockaway Peake	Bayswater		52.8		NYIS	Northeast	55699	1		B-MPH Agr	6/28/2020	6/29/2030	Purchase	
34758	MPH Rockaway Peake	Jamaica Ba		53.9		NYIS	Northeast	56141	2		JB-MPH Ag	6/28/2020	6/29/2030	Purchase	
28798	Sunrise Power Compa	Orange Co		215	CISO			55182			SR OCPA R	1/1/2023	12/31/2027	Sale	01/01/202 3 through 12/31/202 4: 275 MW 01/01/202 5 through 12/31/202 6: 215 MW 01/01/202 7 through 12/31/202 7: 175 MW
26930	Pinelawn Power, LLC	Long Island		74.5	NYLI						2	7/1/2005	10/31/2025	Sale	This PPA is for the output of seller's multi-unit plant described in entities_to_genassets.
28799	Sunrise Power Compa	Central Coa		50	CISO			55182			SR 3CE RA	1/1/2023	12/31/2027	Sale	01/01/202 3 through 12/31/202 3: 26 MW 01/01/202 4 through 12/31/202 7: 50 MW

ID	Filing Entity and its Energy Affiliates	Docket Number Where MBR Granted	Generation Name	Owned By	Controlled By	Date Control Transferred	Market / Balancing Authority Area	Geographic Region	In-Service Date	Plant Code	Generator ID	Unit Code	Amount Attributed to Entity and Affiliates	Capacity Rating Used in Filing(MW)	Capacity Rating Methodology Use in (K): Nameplate, Seasonal,5 - yr Unit, 5 - yr EIA, Alternative	End Note Number (Enter text in End Note Tab)
4607	Bayswater Peaking Facility, LLC	ER02-669-000	Bayswater Peaking Facility LLC	Bayswater Peaking Facility, LLC	Bayswater Peaking Facility, LLC	1/1/1960	NYLI	Northeast	2002-06	55699	1		52.8	52.8	2	52.8 (s) / 58 (w)
13993	Boott Hydropower, LLC	ER23-1766-000	Boott Hydropower	Boott Hydropower, LLC	Boott Hydropower, LLC	10/1/1985	ISNE	Northeast	1985-10	10556	GEN1		7.5	7.5	1	
13994	Boott Hydropower, LLC	ER23-1766-000	Boott Hydropower	Boott Hydropower, LLC	Boott Hydropower, LLC	10/1/1985	ISNE	Northeast	1985-10	10556	GEN2		7.5	7.5	1	
13995	Boott Hydropower, LLC	ER23-1766-000	Boott Hydropower	Boott Hydropower, LLC	Boott Hydropower, LLC	10/1/1985	ISNE	Northeast	1985-10	10556	GEN3		7.9	7.9	1	
5556	Edgewood Energy, LLC	ER02-1749-000	Edgewood Energy LLC	Edgewood Energy, LLC		1/1/1960	NYLI	Northeast	2002-07	55786	CT01		42.5	42.5	2	
5557	Edgewood Energy, LLC	ER02-1749-000	Edgewood Energy LLC	Edgewood Energy, LLC		1/1/1960	NYLI	Northeast	2002-07	55786	CT02		42.5	42.5	2	
18126	EF Oxnard LLC	ER20-1604-001	E F Oxnard Energy Facility	EF Oxnard LLC	EF Oxnard LLC	4/13/1990	CISO	Southwest	1990-06	10776	GTG		48.5	48.5	2	
5567	Equus Power I, L.P.	ER04-878-000	Equus Freeport Power	Equus Power I, L.P.	Equus Power I, L.P.	1/1/1960	NYLI	Northeast	2004-06	56032		1	46.2	46.2	2	
13071	Forked River Power LLC	ER07-1212-000	Forked River	Forked River Power LLC	Forked River Power LLC	1/1/1960	PJMAP	Northeast	1989-07	7138		2	31	31	2	The Forked River Power LLC facility is located within the PJM East, 5004/5005, and AP South submarkets of the PJM BAA. 31 (s) / 41 (w)
13072	Forked River Power LLC	ER07-1212-000	Forked River	Forked River Power LLC	Forked River Power LLC	1/1/1960	PJMAP	Northeast	1989-06	7138		1	34	34	2	The Forked River Power LLC facility is located within the PJM East, 5004/5005, and AP South submarkets of the PJM BAA. 34 (s) / 44 (w)
4621	Jamaica Bay Peaking Facility, LLC	ER03-623-000	Jamaica Bay Peaking	Jamaica Bay Peaking Facility, LLC	Jamaica Bay Peaking Facility, LLC	1/1/1960	NYLI	Northeast	2003-07	56141		2	53.9	53.9	2	53.9 (s) / 53.1 (w)
4633	MPH AL Pierce, LLC	ER22-284-000	A L Pierce	MPH AL Pierce, LLC	MPH AL Pierce, LLC	12/31/2021	ISNE	Northeast	2007-10	6635		4	74.1	74.1	2	74.1 (s) / 94.6 (w)
17732	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	1999-07	55199	GT1		150	150	2	
17733	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	1999-07	55199	GT2		150	150	2	
17734	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	1999-07	55199	GT3		150	150	2	
17735	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	1999-07	55199	GT4		150	150	2	
17736	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	2001-08	55199	GT8		150	150	2	
17737	MPH Elwood, LLC	ER25-1309-001	Elwood Energy LLC	MPH Elwood, LLC	MPH Elwood, LLC	6/1/2025	PJM	Northeast	2001-07	55199	GT9		150	150	2	
5578	Pinelawn Power, LLC	ER05-305-000	Pinelawn Power LLC	Pinelawn Power, LLC		1/1/1960	NYLI	Northeast	2005-07	56188	CTG	CC1	47	47	2	
5579	Pinelawn Power, LLC	ER05-305-000	Pinelawn Power LLC	Pinelawn Power, LLC		1/1/1960	NYLI	Northeast	2005-10	56188	STG	CC1	27.5	27.5	2	
4649	Pittsfield Generating Company, L.P.	ER98-4400-000	Pittsfield Generating LP	Pittsfield Generating Company, L.P.	Pittsfield Generating Company, L.P.	1/1/1960	ISNE	Northeast	1990-07	50002	GEN2	CC1	35.2	35.2	2	35.2 (s) / 43.3 (w)
4650	Pittsfield Generating Company, L.P.	ER98-4400-000	Pittsfield Generating LP	Pittsfield Generating Company, L.P.	Pittsfield Generating Company, L.P.	1/1/1960	ISNE	Northeast	1990-07	50002	GEN3	CC1	35.2	35.2	2	35.2 (s) / 43.3 (w)
4651	Pittsfield Generating Company, L.P.	ER98-4400-000	Pittsfield Generating LP	Pittsfield Generating Company, L.P.	Pittsfield Generating Company, L.P.	1/1/1960	ISNE	Northeast	1990-07	50002	GEN4	CC1	45.8	45.8	2	45.8 (s) / 53.4 (w)
4654	Pittsfield Generating Company, L.P.	ER98-4400-000	Pittsfield Generating LP	Pittsfield Generating Company, L.P.	Pittsfield Generating Company, L.P.	1/1/1960	ISNE	Northeast	1990-07	50002	GEN1	CC1	35.2	35.2	2	35.2 (s) / 43.3 (w)
5580	Shoreham Energy, LLC	ER02-1747-000	Shoreham Energy LLC	Shoreham Energy, LLC		1/1/1960	NYLI	Northeast	2002-07	55787	CT01		42.5	42.5	2	
5581	Shoreham Energy, LLC	ER02-1747-000	Shoreham Energy LLC	Shoreham Energy, LLC		1/1/1960	NYLI	Northeast	2002-07	55787	CT02		42.5	42.5	2	
5085	Sunrise Power Company, LLC	ER01-2217-000	Sunrise Power LLC	Sunrise Power Company, LLC	Sunrise Power Company, LLC	1/1/1960	CISO	Southwest	2001-06	55182	X719	CC1	150	150	2	150 (s) / 160 (w)
5086	Sunrise Power Company, LLC	ER01-2217-000	Sunrise Power LLC	Sunrise Power Company, LLC	Sunrise Power Company, LLC	1/1/1960	CISO	Southwest	2003-06	55182	STG	CC1	245	245	2	245 (s) / 270 (w)
5087	Sunrise Power Company, LLC	ER01-2217-000	Sunrise Power LLC	Sunrise Power Company, LLC	Sunrise Power Company, LLC	1/1/1960	CISO	Southwest	2001-06	55182	X718	CC1	150	150	2	150 (s) / 160 (w)
4680	Waterbury Generation LLC	ER08-200-000	Waterbury Generation	Waterbury Generation LLC	Waterbury Generation LLC	1/1/1960	ISNE	Northeast	2009-06	56629		10	96	96	2	96 (s) / 100 (w)

Exhibit C

Organizational Charts

Simplified Pre-Transaction Organization Chart **Exhibit C**



Simplified Post-Transaction Organization Chart **Exhibit C**

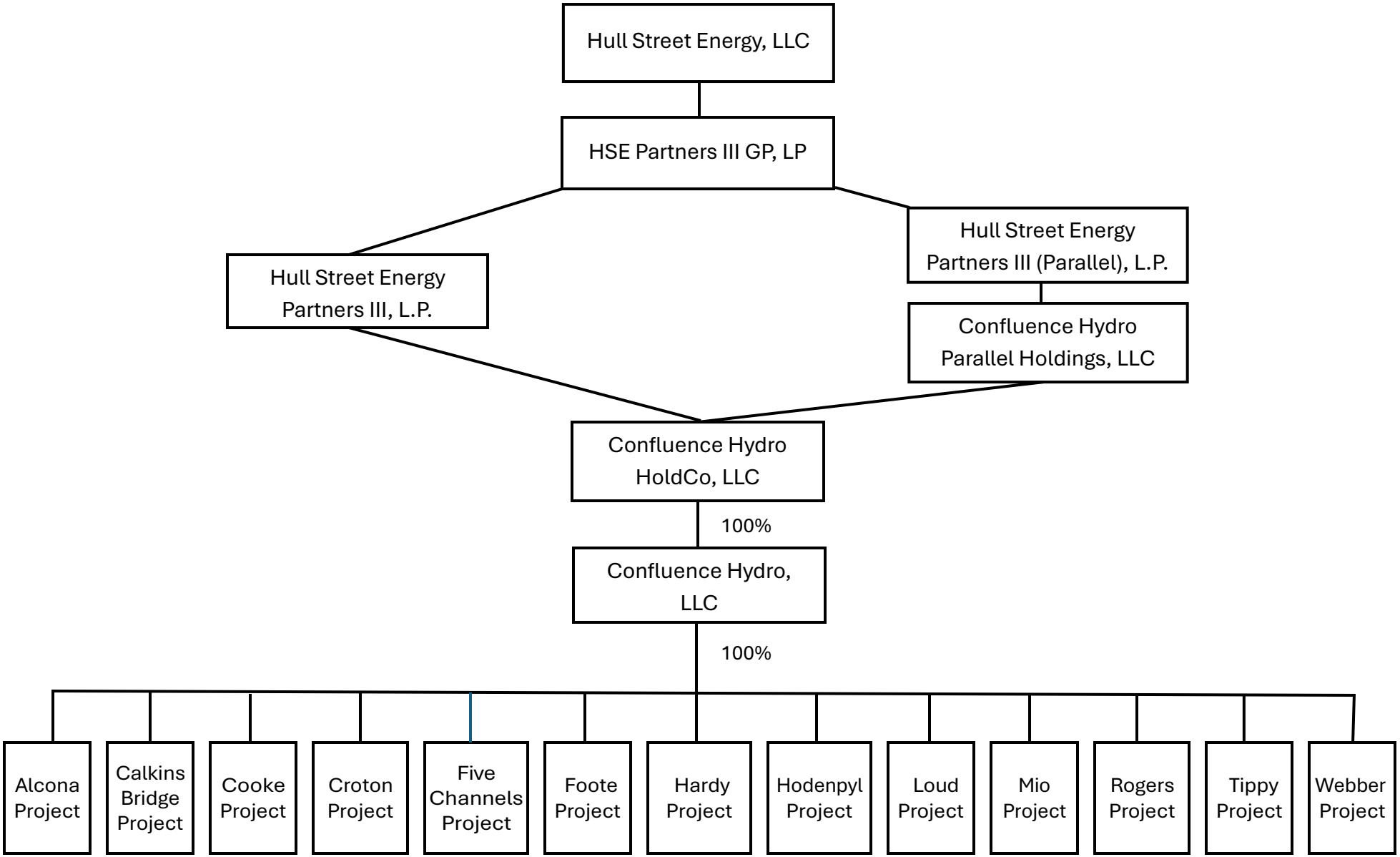


Exhibit G

Description of Jurisdictional Facilities

The jurisdictional facilities that will be affected by the Transaction consist of the limited and discrete interconnection equipment associated with the Project Assets, and any related agreements, books, and records.

Exhibit I

Contracts Related to the Transaction

Public Version
CUI//PRIV Information
Has Been Removed

Exhibit K

Map of Project Assets

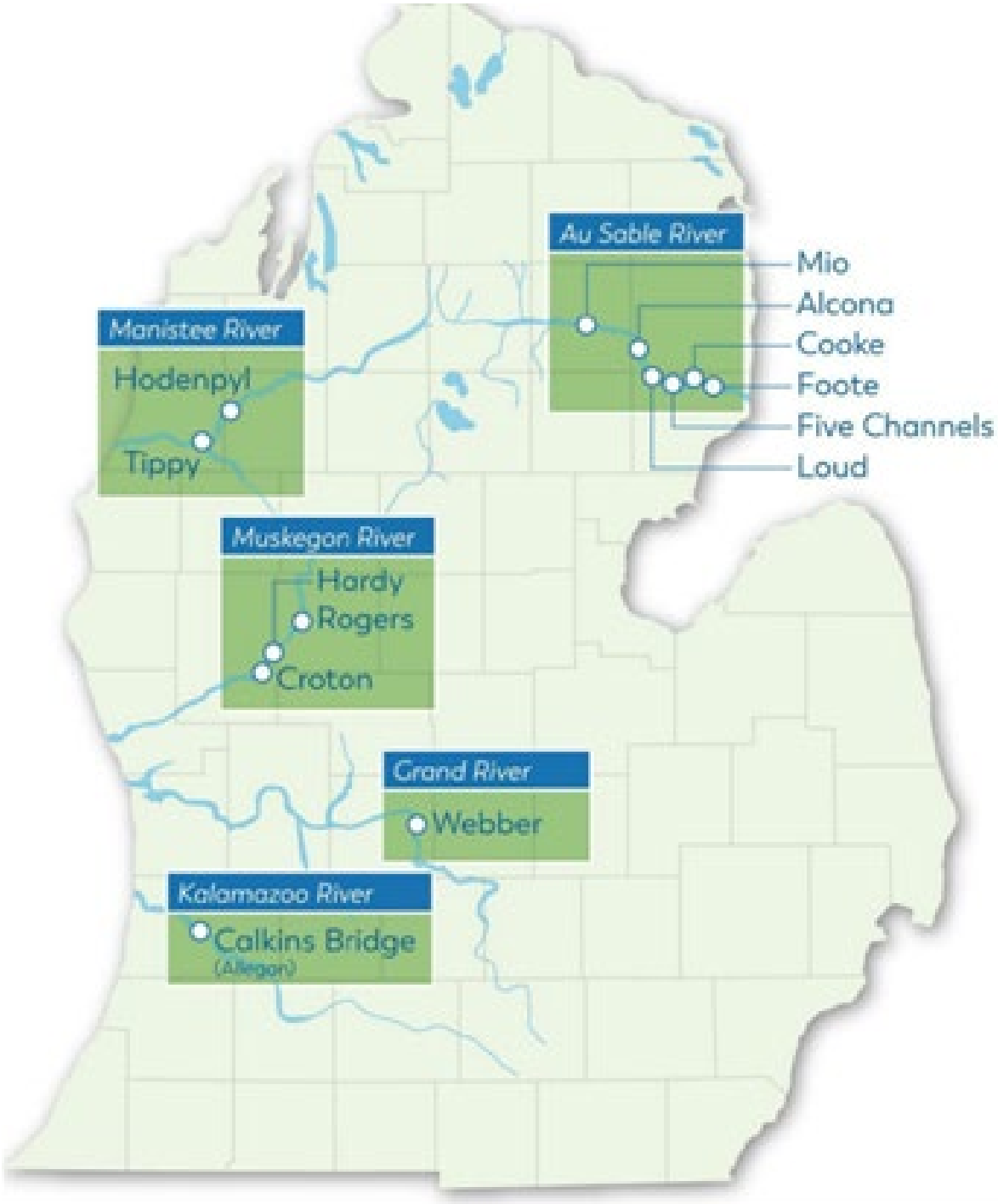

Au Sable River
Mio
Alcona
Cooke
Foote
Five Channels
Loud
Manistee River
Hodenpyl
Tippy
Muskegon River
Hardy
Rogers
Croton
Grand River
Webber
Kalamazoo River
Calkins Bridge
(Allegan)

Exhibit L

Licenses, Orders, and Other Approvals from Other Regulatory Bodies Required in Connection with the Transaction

In addition to the authorization sought herein from the Commission under section 203 of the FPA and approvals by the Commission to transfer and amend the hydroelectric licenses associated with the 13 Project Assets under Part I of the FPA, Applicants are seeking licenses, orders, or other approvals from the following other regulatory bodies in connection with the Transaction:

- Approval by the Michigan Public Service Commission of the transactions contemplated by the Purchase Agreement, including the REPA
- The expiration or earlier termination of all applicable waiting period under the Hart-Scott-Rodino Antitrust Improvement Act of 1976
- Approval by the Federal Communications Commission to transfer or assign any applicable Federal Communications Commission licenses

Exhibit M

Statements Regarding Cross-Subsidization

The Transaction does not present a cross-subsidization concern with respect to the Project Assets. Pursuant to section 33.2(j)(1) of the Commission's regulations, Applicants provide assurances and verify, based on facts and circumstances known to Applicants or that are reasonably foreseeable, that the Transaction will not result in, at the time of the Transaction or in the future, cross-subsidization of a non-utility associate company or pledge or encumbrance of utility assets for the benefit of an associate company, including:

(1) Any transfer of facilities between a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, and an associate company;

(2) Any new issuance of securities by a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, for the benefit of an associate company;

(3) Any new pledge or encumbrance of assets of a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, for the benefit of an associate company; or

(4) Any new affiliate contract between a non-utility associate company and a traditional public utility associate company that has captive customers or that owns or provides transmission service over jurisdictional transmission facilities, other than non-power goods and services agreements subject to review under sections 205 and 206 of the FPA.

Attachment 1

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	)	**Docket No. EC26-___-000**
Confluence Hydro, LLC	)	
Confluence Hydro Alcona, LLC	)	
Confluence Hydro Calkins Bridge, LLC	)	
Confluence Hydro Cooke, LLC	)	
Confluence Hydro Croton, LLC	)	
Confluence Hydro Five Channels, LLC	)	
Confluence Hydro Foote, LLC	)	
Confluence Hydro Hardy, LLC	)	
Confluence Hydro Hodenpyl, LLC	)	
Confluence Hydro Loud, LLC	)	
Confluence Hydro Mio, LLC	)	
Confluence Hydro Rogers, LLC	)	
Confluence Hydro Tippy, LLC	)	
Confluence Hydro Webber, LLC	)	

VERIFICATION OF APPLICATION FOR AUTHORIZATION FOR DISPOSITION OF JURISDICTIONAL FACILITIES

Pursuant to 28 U.S.C. § 1746, Randall Osteen declares under penalty of perjury that: he is General Counsel of Hull Street Energy, LLC ("HSE") and has the authority to verify the foregoing Application on behalf of Confluence Hydro, LLC, Confluence Hydro Alcona, LLC, Confluence Hydro Calkins Bridge, LLC, Confluence Hydro Cooke, LLC, Confluence Hydro Croton, LLC, Confluence Hydro Five Channels, LLC, Confluence Hydro Foote, LLC, Confluence Hydro Hardy, LLC, Confluence Hydro Hodenpyl, LLC, Confluence Hydro Loud, LLC, Confluence Hydro Mio, LLC, Confluence Hydro Rogers, LLC, Confluence Hydro Tippy, LLC, Confluence Hydro Webber, LLC (collectively, the "Hull Street Applicants"), HSE, and HSE's affiliates. He has read the Application and, to the best of his knowledge, information, and belief, all of the statements contained therein with respect to the HSE Applicants, HSE, and HSE's affiliates are true and accurate.

Randall Osteen
General Counsel

Executed on the 28th day of October, 2025

Attachment 1

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Docket No. EC26-___-000**
Confluence Hydro, LLC	**)**	
Confluence Hydro Alcona, LLC	**)**	
Confluence Hydro Calkins Bridge, LLC	**)**	
Confluence Hydro Cooke, LLC	**)**	
Confluence Hydro Croton, LLC	**)**	
Confluence Hydro Five Channels, LLC	**)**	
Confluence Hydro Foote, LLC	**)**	
Confluence Hydro Hardy, LLC	**)**	
Confluence Hydro Hodenpyl, LLC	**)**	
Confluence Hydro Loud, LLC	**)**	
Confluence Hydro Mio, LLC	**)**	
Confluence Hydro Rogers, LLC	**)**	
Confluence Hydro Tippy, LLC	**)**	
Confluence Hydro Webber, LLC	**)**	

VERIFICATION OF APPLICATION FOR AUTHORIZATION
FOR DISPOSITION OF JURISDICTIONAL FACILITIES

Pursuant to 28 U.S.C. § 1746, Shaun Johnson declares under penalty of perjury that: he is Executive Vice President of Business Transformation and Chief Legal and Administrative Officer for Consumers Energy Company ("Consumers") and has the authority to verify the foregoing Application on behalf of Consumers and Consumers' affiliates. He has read the Application and, to the best of his knowledge, information, and belief, all of the statements contained therein with respect to Consumers and Consumers' affiliates are true and accurate.

Shaun Johnson
Executive Vice President of Business
Transformation and
Chief Legal and Administrative Officer
Consumers Energy Company

Executed on the 30 day of October, 2025

Attachment 2

Proposed Accounting Entries for Consumers Energy

Public Version
CUI//PRIV Information
Has Been Removed

Attachment 3

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Docket No. EC26-___-000**
Confluence Hydro, LLC	**)**	
Confluence Hydro Alcona, LLC	**)**	
Confluence Hydro Calkins Bridge, LLC	**)**	
Confluence Hydro Cooke, LLC	**)**	
Confluence Hydro Croton, LLC	**)**	
Confluence Hydro Five Channels, LLC	**)**	
Confluence Hydro Foote, LLC	**)**	
Confluence Hydro Hardy, LLC	**)**	
Confluence Hydro Hodenpyl, LLC	**)**	
Confluence Hydro Loud, LLC	**)**	
Confluence Hydro Mio, LLC	**)**	
Confluence Hydro Rogers, LLC	**)**	
Confluence Hydro Tippy, LLC	**)**	
Confluence Hydro Webber, LLC	**)**	

PROTECTIVE AGREEMENT

This Protective Agreement ("Agreement") is entered into this ___ day of _____, by and between Consumers Energy Company, Confluence Hydro, LLC, Confluence Hydro Alcona, LLC, Confluence Hydro Calkins Bridge, LLC, Confluence Hydro Cooke, LLC, Confluence Hydro Croton, LLC, Confluence Hydro Five Channels, LLC, Confluence Hydro Foote, LLC, Confluence Hydro Hardy, LLC, Confluence Hydro Hodenpyl, LLC, Confluence Hydro Loud, LLC, Confluence Hydro Mio, LLC, Confluence Hydro Rogers, LLC, Confluence Hydro Tippy, LLC, Confluence Hydro Webber, LLC ("Applicants") and _____ ("Intervenor"), and shall govern the use of all Privileged Materials produced by Applicants to Intervenor, or vice versa, in connection with the proceeding before the Federal Energy Regulatory Commission (the "Commission") in Docket No._____. Applicants and Intervenor are sometimes referred to herein individually as a "Party" or jointly as the "Parties."

1. The Commission's regulations and its policy governing the labelling of controlled unclassified information ("CUI") establish and distinguish the respective designations of Privileged Material and/or Critical Energy/Electric Infrastructure Information ("CEII"). *See Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*, 83 Fed. Reg. 21,290 (May 9, 2018) (issued by Commission May 3, 2018).

2. Applicants filed Privileged Materials in Commission Docket No. _____ (the "proceeding") and Intervenor is a Participant in such proceeding, as the term Participant is defined in 18 C.F.R. § 382.102(b), or has filed a motion to intervene or a notice of intervention in such proceeding. Applicants and Intervenor enter into this Agreement in accordance with

their respective rights and obligations set forth in 18 C.F.R. § 388.112(b)(2). Notwithstanding any order terminating such proceeding, this Agreement shall remain in effect until specifically modified or terminated by the Commission or court of competent jurisdiction.

3. This Agreement applies to the following two categories of Privileged Materials: (A) a Party may designate as protected those materials which customarily are treated by that Party as commercially sensitive or proprietary or material subject to a legal privilege, which are not available to the public, and which, if disclosed freely, would subject that Party or its customers to risk of competitive disadvantage or other business injury; and (B) a Party must designate as protected those materials which contain CEII, as defined in 18 C.F.R. §§ 388.113(a), and (c).

4. Definitions – For purposes of this Agreement:

(a) (1) Participant: as defined in 18 C.F.R. § 385.102(b); and (2) Party: as defined in 18 C.F.R. § 385.102(c).

(b) (1) The term "Privileged Materials" means (A) materials provided by a Party in association with the proceeding and designated by such Party as protected; (B) any information contained in or obtained from such designated materials; (C) any other materials that are made subject to this Protective Agreement by the Commission, by any court or other body having appropriate authority, or by agreement of the Participants; (D) material that is privileged under federal, state, or foreign law, such as work-product privilege, attorney-client privilege, or governmental privilege, and that is designated as Privileged Materials by such Participant; (E) notes of Privileged Materials; and (F) copies of Privileged Materials. The Party producing the Privileged Materials shall physically mark them on each page as "CUI//PRIV" to indicate that they are Privileged Materials. If the Privileged Materials contain CEII, the Party producing such information shall additionally mark on each page containing such information the words "Contains Critical Energy/Electric Infrastructure Information—Do Not Release."

(2) The term "Notes of Privileged Materials" means memoranda, handwritten notes, or any other form of information (including electronic form) which copies or discloses materials described in Paragraph 4(b)(1). Notes of Privileged Materials are subject to the same restrictions provided in this Agreement for Privileged Materials except as specifically provided in this Agreement.

(3) Privileged Materials shall not include (A) any information or document contained in the publicly available files of the Commission or of any other federal or state agency, or any federal or state court, unless the information or document has been determined to be privileged by such agency or court, or (B) information that is public knowledge, or which becomes public knowledge, other than through disclosure in violation of this Agreement. Privileged Materials do include any information or documents contained in the files of the Commission that have been designated as CEII.

(c) Critical Energy/Electric Infrastructure Information (CEII): as defined at 18 C.F.R. §§ 388.113(a), and (c).

(d) The term "Non-Disclosure Certificate" shall mean the certificate annexed hereto by which Reviewing Representatives have been granted access to Privileged Materials and/or CEII

must certify their understanding that such access to Privileged Materials is provided pursuant to the terms and restrictions of this Agreement, and that they have read the Agreement and agree to be bound by it. Each Party shall provide a copy of the Non-Disclosure Certificate(s) executed by its Reviewing Representative(s) to the other Party prior to such Reviewing Representative(s) receiving access to any Privileged Materials. All Non-Disclosure Certificates must be served on all Participants on the official service list maintained by the Secretary of the Commission for this proceeding.

(e) The term "Reviewing Representative" shall mean a person who has signed a Non-Disclosure Certificate and who is:

(1) Commission Trial staff designated as such in this proceeding;

(2) an attorney retained by a Party for purposes of the proceeding;

(3) attorneys, paralegals, and other employees associated for purposes of the proceeding with an attorney described in Paragraph (4)(e)(2);

(4) an expert or an employee of an expert retained by a Party for the purpose of advising, preparing for, submitting evidence or testifying in the proceeding;

(5) a person designated as a Reviewing Representative by order of the Commission; or

(6) employees or other representatives of a Party with significant responsibility for matters involving the proceeding.

5. Privileged Materials shall be made available under the terms of this Agreement only to Parties and only through their Reviewing Representative(s) as provided in Paragraphs 8-10.

6. Privileged Materials shall remain available to a Party until the later of the date that an order terminating the proceeding becomes no longer subject to judicial review, or the date that any other Commission proceeding relating to the Privileged Material is concluded and no longer subject to judicial review. If requested to do so in writing after that date, the Party shall, within 15 days of such request, return the Privileged Materials (excluding Notes of Privileged Materials) to the Party that produced them, or shall destroy the materials, except that copies of filings, official transcripts and exhibits in the proceeding that contain Privileged Materials, and Notes of Privileged Materials may be retained, if they are maintained in accordance with Paragraph 7, below. Within such time period the Party, if requested to do so, shall also submit to the producing Party an affidavit stating that, to the best of its knowledge, all Privileged Materials and all Notes of Privileged Materials have been returned or have been destroyed or will be maintained in accordance with Paragraph 7. To the extent Privileged Materials are not returned or destroyed, they shall remain subject to this Agreement.

7. All Privileged Materials shall be maintained by the Party in a secure place. Access to those materials shall be limited to those Reviewing Representatives specifically authorized pursuant to Paragraphs 9-10.

8. Privileged Materials shall be treated as confidential by the Party and its Reviewing Representative(s) in accordance with the certificate executed pursuant to Paragraph 10.

Privileged Materials shall not be used except as necessary for the conduct of the proceeding, nor shall they (or the substance of their contents) be disclosed in any manner to any person except a Reviewing Representative who is engaged in the conduct of the proceeding and who needs to know the information in order to carry out that person's responsibilities in the proceeding. Reviewing Representatives may make copies of Privileged Materials, but such copies become Privileged Materials. Reviewing Representatives may make notes of Privileged Materials, which shall be treated as Notes of Privileged Materials if they disclose the contents of Privileged Materials.

9. (a) If a Reviewing Representative's scope of employment includes the marketing of energy or the buying or selling of electric generation or transmission assets, the direct supervision of any employee or employees whose duties include the foregoing, the provision of consulting services to any person whose duties include the foregoing, or the direct supervision of any employee or employees whose duties include the foregoing, such Reviewing Representative may not use information contained in any Privileged Materials obtained through the proceeding to give any Party or any competitor of any Party a commercial advantage.

(b) If a Party wishes to designate as a Reviewing Representative a person not described in Paragraph 4(e) above, the Party shall seek agreement from the Party providing the Privileged Materials. If an agreement is reached that person shall be a Reviewing Representative pursuant to Paragraphs 4(e) above with respect to those materials. If no agreement is reached, the Party shall submit the disputed designation to the Commission for resolution.

10. (a) A Reviewing Representative shall not be permitted to inspect, participate in discussions regarding, or otherwise be permitted access to Privileged Materials pursuant to this Agreement unless that Reviewing Representative has first executed a Non-Disclosure Certificate; provided, that if an attorney qualified as a Reviewing Representative has executed such a certificate, the paralegals, secretarial and clerical personnel under the attorney's instruction, supervision or control need not do so. A copy of each Non-Disclosure Certificate shall be provided to counsel for the Party asserting confidentiality prior to disclosure of any Privileged Material to that Reviewing Representative. All executed Non-Disclosure Certificates must be served on all Participants on the official service list maintained by the Secretary of the Commission for this proceeding.

(b) Attorneys qualified as Reviewing Representatives are responsible for ensuring that persons under their supervision or control comply with this Agreement, and must take all reasonable precautions to ensure that Privileged Material and/or CEII are not disclosed to unauthorized persons.

11. Any Reviewing Representative may disclose Privileged Materials to any other Reviewing Representative as long as the disclosing Reviewing Representative and the receiving Reviewing Representative both have executed a Non-Disclosure Certificate. In the event that any Reviewing Representative to whom the Privileged Materials are disclosed ceases to be engaged in the proceeding, or is employed or retained for a position whose occupant is not qualified to be a Reviewing Representative under Paragraph 4(e), access to Privileged Materials by that person shall be terminated. Even if no longer engaged in the proceeding, every person

who has executed a Non-Disclosure Certificate shall continue to be bound by the provisions of this Agreement and the certification.

12. Subject to Paragraph 20, the Commission shall resolve any disputes arising under this Agreement. Prior to presenting any dispute under this Agreement to the Commission, the parties to the dispute shall use their best efforts to resolve it. If a Party contests the designation of materials as privileged, it shall notify the Party that provided the Privileged Materials by specifying in writing the materials whose designation is contested. This Agreement shall automatically cease to apply to such materials five (5) business days after the notification is made unless the Party, within said 5-day period, files a motion with the Commission, with supporting affidavits, demonstrating that the materials should continue to be privileged. In any challenge to the designation of materials as Privileged, the burden of proof shall be on the Party seeking protection. If the Commission finds that the materials at issue are not entitled to protection, the procedures of Paragraph 20 shall apply. The procedures described above shall not apply to Privileged Materials designated by a Party as CEII. Materials so designated shall remain privileged and subject to the provisions of this Agreement unless a Party requests and obtains a determination from the Commission's CEII Coordinator that such materials need not remain privileged.

13. All copies of all documents reflecting Privileged Materials, including the portion of any hearing testimony, exhibits, transcripts, briefs, and other documents which refer to Privileged Materials, shall be filed and served under privilege by appropriate means endorsed to the effect that they are privileged pursuant to this Agreement. Such documents shall be marked "CUI//PRIV" and shall be filed and served under privilege upon the Commission and all Reviewing Representatives who are on the service list. Such CEII documents shall be additionally marked "Contains Critical Energy/Electric Infrastructure Information—Do Not Release." For anything filed under privilege, redacted versions or, where an entire document is privileged, a letter indicating such, will also be filed with the Commission and served on all parties on the service list. Counsel for the producing Party shall, upon the request of a Party, provide a list of Reviewing Representatives who are entitled to receive such material. Counsel shall take all reasonable precautions necessary to assure that Privileged Materials are not distributed to unauthorized persons.

14. All Privileged Material and/or CEII in this proceeding filed with the Commission, submitted to the Presiding Judge, or submitted to any Commission personnel, must comply with the Commission's *Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*.[1] Consistent with those requirements:

(a) Documents that contain Privileged Material must include a top center header on each page of the document with the following text: CUI//PRIV. Any corresponding electronic files must also include this text in the file name.

[1] 83 Fed. Reg. 21,290 (May 9, 2018) (issued by Commission May 3, 2018).

(b) Documents that contain CEII must include a top center header on each page of the document with the following text: CUI//CEII. Any corresponding electronic files must also include this text in the file name.

(c) Documents that contain both Privileged Material and CEII must include a top center header on each page of the document with the following text: CUI//CEII/PRIV. Any corresponding electronic files must also include this text in the file name.

(d) The specific content on each page of the document that constitutes Privileged Material and/or CEII must also be clearly identified. For example, lines or individual words or numbers that include both Privileged Material and CEII shall be prefaced and end with "BEGIN CUI//CEII/PRIV" and "END CUI//CEII/PRIV".

15. If any Party desires to include, utilize or refer to any Privileged Materials or information derived therefrom in pleadings, testimony or exhibits to the proceeding in such a manner that might require disclosure of such material to persons other than Reviewing Representatives, such Party shall first notify both counsel for the disclosing Party and the Commission of such desire, identifying with particularity each of the Privileged Materials. Thereafter, use of such Privileged Materials will be governed by procedures determined by the Commission.

16. Nothing in this Agreement shall be construed as precluding any Party from objecting to the use of Privileged Materials on any legal grounds.

17. Nothing in this Agreement shall preclude any Party from requesting the Commission or any other body having appropriate authority to find that this Agreement should not apply to all or any materials previously designated as Privileged Materials pursuant to this Agreement. The Commission may alter or amend this Agreement as circumstances warrant at any time during the course of the proceeding.

18. The Parties may amend this Agreement only by mutual consent and in writing; provided, however, that a Party has the right to seek changes to this Agreement as appropriate from the Commission.

19. All Privileged Materials filed with the Commission or any other judicial or administrative body, in support of, or as a part of, a motion, other pleading, brief, or other document, shall be filed and served under privilege by appropriate means bearing prominent markings indicating that the contents include Privileged Materials subject to this Agreement. Such documents containing CEII shall be additionally marked "Contains Critical Energy/Electric Infrastructure Information—Do Not Release."

20. If the Commission finds at any time in the course of the proceeding that all or part of the Privileged Materials need not be privileged, those materials shall, nevertheless, be subject to the protection afforded by this Agreement for three (3) business days from the date of issuance of the Commission's decision, and if the Party seeking protection files an interlocutory appeal or requests that the issue be certified to the Commission, for an additional seven (7) business days. No Party waives its rights to seek additional administrative or judicial remedies after the Commission's decision respecting Privileged Materials or Reviewing Representatives, or the Commission's denial of any appeal thereof. The provisions of 18 C.F.R. §§ 388.112 and

388.113 shall apply to any requests for Privileged Materials in the files of the Commission under the Freedom of Information Act (5 U.S.C. § 552).

21. Nothing in this Agreement shall be deemed to preclude any Party from independently seeking through discovery in any other administrative or judicial proceeding information or materials produced in the proceeding under this Agreement.

22. No Party waives the right to pursue any other legal or equitable remedies that may be available in the event of actual or anticipated disclosure of Privileged Materials.

23. The contents of Privileged Materials or any other form of information that copies or discloses Privileged Materials shall not be disclosed to anyone other than in accordance with this Agreement and shall be used only in connection with the proceeding. Any violation of this Agreement and of any Non-Disclosure Certificate executed hereunder shall constitute a violation of an order of the Commission.

IN WITNESS WHEREOF, the Parties each have caused this Protective Agreement to be signed by their respective duly authorized representatives as of the date first set forth above.

By: _____

Name: _____

Title: _____

Representing Applicants

By: _____

Name: _____

Title: _____

Representing Intervenor

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Consumers Energy Company	**)**	**Docket No. EC26-___-000**
Confluence Hydro, LLC	**)**	
Confluence Hydro Alcona, LLC	**)**	
Confluence Hydro Calkins Bridge, LLC	**)**	
Confluence Hydro Cooke, LLC	**)**	
Confluence Hydro Croton, LLC	**)**	
Confluence Hydro Five Channels, LLC	**)**	
Confluence Hydro Foote, LLC	**)**	
Confluence Hydro Hardy, LLC	**)**	
Confluence Hydro Hodenpyl, LLC	**)**	
Confluence Hydro Loud, LLC	**)**	
Confluence Hydro Mio, LLC	**)**	
Confluence Hydro Rogers, LLC	**)**	
Confluence Hydro Tippy, LLC	**)**	
Confluence Hydro Webber, LLC	**)**	

NON-DISCLOSURE CERTIFICATE

I hereby certify my understanding that access to Privileged Materials and/or Critical Energy/Electric Infrastructure Information ("CEII") is provided to me pursuant to the terms and restrictions of the Protective Agreement dated _____ by and between [Applicants] and [Intervenor] concerning materials in Federal Energy Regulatory Commission Docket No. _____, that I have been given a copy of and have read the Protective Agreement, and that I agree to be bound by it. I understand that the contents of the Privileged Materials and/or CEII, any notes or other memoranda, or any other form of information that copies or discloses Privileged Materials shall not be disclosed to anyone other than in accordance with that Protective Agreement. I acknowledge that a violation of this certificate constitutes a violation of an order of the Federal Energy Regulatory Commission.

By: _____

Name: _____

Title: _____

Representing: _____

Date: _____

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

REDACTED

DIRECT TESTIMONY

OF

RICHARD T. BLUMENSTOCK

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025

Q. Please state your name and business address.

A. My name is Richard T. Blumenstock, and my business address is 1945 West Parnall Road, Jackson, Michigan 49201.

Q. By whom are you employed?

A. I am employed by Consumers Energy Company ("Consumers Energy" or the "Company").

Q. What is your position with Consumers Energy?

A. I am currently the Executive Director of Electric Supply Engineering. I began employment at the Company in May 1994 in the electric transmission planning area where I performed planning studies on the Company's distribution and transmission systems. In April 2002, I was assigned to the electric operations area where I oversaw engineering operations for the distribution and transmission systems. In August 2009, I was assigned to the fuel supply area where I oversaw the Company's purchasing and transport functions for fuel for electric generation. In June 2011, I assumed additional responsibilities including oversight of the Company's interaction in the Midcontinent Independent System Operator, Inc. ("MISO") markets; wholesale settlements and transactions functions; Power Supply Cost Recovery ("PSCR") activities; and planning for electric supply necessary to satisfy customers' energy and capacity needs. In September 2019, I assumed the role of Executive Director of Electric Planning, overseeing the Company-wide efforts for all electric planning. In September 2022, I assumed my current position as Executive Director of Electric Supply Engineering.

Q. What are your responsibilities as Executive Director of Electric Supply Engineering?

A. My responsibilities as Executive Director of Electric Supply Engineering include oversight of all activities associated with planning and design for the Company's existing electric generation portfolio.

Q. What is your formal educational experience?

A. I received a Bachelor of Science degree in 1992 and a Master of Science degree in 1994, both in Electrical Engineering from Michigan Technological University.

Q. Have you previously provided testimony before the Michigan Public Service Commission ("MPSC" or the "Commission")?

A. Yes, I provided testimony in the following MPSC cases:

- Case No. U-16045-R: Reconciliation of PSCR Costs and Revenues for the Calendar Year 2010;
- Case No. U-16432-R: Reconciliation of PSCR Costs and Revenues for the Calendar Year 2011;
- Case No. U-16890: Approval of a PSCR Plan and for Authorization of Monthly PSCR Factors for the Year 2012;
- Case No. U-16890-R: Reconciliation of PSCR Costs and Revenues for the Calendar Year 2012;
- Case No. U-17429: Approval of a Certificate of Necessity for the Thetford Generating Plant pursuant to MCL 460.6s and for related accounting and ratemaking authorizations;
- Case No. U-17317: Approval of a PSCR Plan and for Authorization of Monthly PSCR Factors for the Year 2014;
- Case No. U-17317-R: Reconciliation of PSCR Costs and Revenues for the Calendar Year 2014;
- Case No. U-17752: Authority to amend its renewable energy plan approved in Case Nos. U-15805, U-16543, U-16581, and U-17301;
- Case No. U-17678: Approval of a PSCR Plan and for Authorization of Monthly PSCR Factors for the Year 2015;

- Case No. U-17678-R: Reconciliation of PSCR Costs and Revenues for the Calendar Year 2015;
- Case No. U-18250: Application of Consumers Energy for a financing order approving the securitization of qualified costs and related approvals associated with the early termination of the Palisades Nuclear Energy Plant Power Purchase Agreement ("PPA");
- Case No. U-20134: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;
- Case No. U-20165: Application of Consumers Energy for approval of its Integrated Resource Plan ("IRP") pursuant to MCL 460.6t and for other relief;
- Case No. U-20697: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;
- Case No. U-20963: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;
- Case No. U-21090: Application of Consumers Energy for Approval of an IRP under MCL 460.6t, certain accounting approvals, and for other relief;
- Case No. U-21224: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;
- Case No. U-21389: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;
- Case No. U-21585: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief; and
- Case No. U-21870: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief.

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to support the Company's request to sell its 13 River Hydroelectric Generating Facilities (the "Facilities"; where my testimony refers to hydroelectric generating facilities individually or generally – rather than the Facilities specifically and collectively – I may use the term "hydro") to Confluence Hydro, LLC ("Confluence"), a subsidiary of Hull Street Energy.

Q. Who is Hull Street Energy?

A. Hull Street Energy is a private equity firm that has significant experience owning, operating, and investing capital in power generation assets across North America, including river hydro generation. The Hull Street Energy team has a long track record of owning and operating hydroelectric facilities across North America, including acquisition and improvement of 47 hydro assets within the past decade. The firm will leverage its experience and capital resources to ensure that the Facilities can continue to safely deliver reliable, clean energy to Michigan customers and are operated in accordance with the Federal Energy Regulatory Commission's ("FERC") license requirements.

Q. Please give a high-level description of the sale.

A. Consumers Energy will sell the Facilities and transfer associated liabilities to Confluence by entering into four primary and interdependent agreements with Confluence. The four agreements include a Purchase and Sale Agreement ("PSA"), PPA, Regulatory Disallowance Agreement ("RDA"), and Environmental Indemnity Agreement ("EIA"), all of which are essential components to the deal and work together to effectuate the transaction.

Consumers Energy will receive $13 from Confluence as the purchase price for the assets ($1 per facility), however, the majority of the value to Consumers Energy and its customers results from the transfer of liabilities (existing and future) associated with the Facilities. The Company and its customers will also continue to benefit from the clean energy and capacity provided by the Facilities.

Q. Does the sale require Consumers Energy to take on any new obligations?

A. Yes. Consumers Energy's agreement to enter into a PPA for production from the Facilities after the sale closes is a material part of the overall transaction. Consumers Energy will pay Confluence a base PPA price of $160 per MWh with a 2.5% annual escalation adjustment for the energy, capacity, and renewable energy credits ("RECs") associated with the energy actually produced at the facilities over the next 30 years, [CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

Q. Please explain why the base PPA price of $160/MWh is reasonable.

A. The PPA price reflects the market value for products purchased as well as the value of the transfer of all liabilities to Confluence, which are primarily the avoidance of significant capital expenditures and decommissioning obligations. As I will explain in Section IV of my testimony, the Company's business case analysis shows that sale of the Facilities at this PPA price results in a lower cost for customers than decommissioning or relicensing (continuing to operate) the Facilities.

Q. What impact will a sale have on resource adequacy and production of renewable energy?

A. There will be a positive impact. Selling the Facilities versus decommissioning them ensures that the capacity remains available for the Company's customers and MISO Zone 7. It also ensures that the renewable energy produced by the Facilities remains available for customers. Moreover, selling the Facilities avoids having to source replacement capacity and renewable energy, potentially with execution and timing risk.

Q. How is your direct testimony related to the direct testimony of other Company witnesses?

A. Company witness Adam J. Monroe will testify to the employee transition plan and Confluence's safety performance. Company witness Angela Thompkins will testify to the community impacts of the sale transaction. Company witness Jason R. Coker will testify to accounting entries, tax impacts, rate impacts, regulatory requests associated with the transaction, and describe the capital structure and cost of capital impacts of the transaction.

Q. Are you sponsoring any exhibits with your direct testimony?

A. Yes, I am sponsoring the following exhibits:

Exhibit A-1 (RTB-1)	Confidential Purchase Sale Agreement;
Exhibit A-2 (RTB-2)	Confidential Power Purchase Agreement;
Exhibit A-3 (RTB-3)	Business Case - Assumption sheet for variables common to all options (discount rate, inflation, starting year, FCM, etc.);
Exhibit A-4 (RTB-4)	Business Case – Sale Annual Cash Flows;
Exhibit A-5 (RTB-5)	Business Case – Decommissioning Annual Cash Flows;
Exhibit A-6 (RTB-6)	Business Case – Relicensing Annual Cash Flows;
Exhibit A-7 (RTB-7)	Business Case – Summary of Net Present Value of Cash Flows for All Options, including Variances;
Exhibit A-8 (RTB-8)	WSP Hydro Roadmap June 2023; and
Exhibit A-9 (RTB-9)	WSP Decommissioning Cost Estimates October 2025.

Q. Were these exhibits prepared by you or under your direction and supervision?

A. Exhibits A-3 (RTB-3) through A-7 (RTB-7) were prepared by me or at my direction. Confidential Exhibits A-1 (RTB-1) and A-2 (RTB-2) are the transaction documents at issue in this case and were extracted from Company records maintained in the ordinary course

of business. Exhibits A-8 (RTB-8) and A-9 (RTB-9) were prepared for the Company by a third-party engineering consultant, WSP USA ("WSP"), and were extracted from Company records maintained in the ordinary course of business.

Q. How are the following sections of your direct testimony organized?

A. My direct testimony is divided into six sections. Section I explains the reason the Company is selling the Facilities. Section II describes the sale process. Section III details the transaction and support agreements. Section IV provides a business case supporting sale of the Facilities. Section V provides required information in response to certain MPSC Section 6q filing requirements. Finally, Section VI summarizes the next steps in finalizing the sale of the Facilities.

SECTION I

RATIONALE FOR SALE

Q. Please describe the assets being sold.

A. The Facilities consist of 13 river hydro generation facilities, operating across five river systems, built between 1905 and 1936, having ~132 MW of nameplate capacity. The Facilities have FERC licenses set to expire between June 2034 and May 2041 with significant investment required for continued operation. Included with the Facilities are over 32,000 acres of land within the FERC license boundaries (i.e. the area within each license required by FERC to operate each hydro generation facility) and transfer of up to 59 Consumers Energy employees having a primary work purpose of supporting river hydro operations.

Q. What is the rationale for selling Consumers Energy's River Hydro Fleet?

A. These facilities have been generating power for Consumers Energy's customers for over 100 years, on average, and have been a central part of the communities in which they are located. Consumers Energy values that history and the many people who have worked for the Company to keep these facilities operating safely for Michigan. However, the Company faced the need to evaluate the future of the Facilities for several reasons. First, the Facilities cost significantly more to operate than other energy and capacity sources available to the Company. Second, the Facilities' FERC licenses start to expire in less than a decade, which drove the Company's need to make a decision about the long-term future of the plants before beginning the complex and potentially expensive relicensing process. Finally, the MPSC Staff and several intervenors in the Company's 2022 Electric Rate Case, Case No. U-21224, raised questions about whether the Company had adequately considered the option to sell the plants in lieu of beginning the significant required investments in the Facilities, which would have been recovered through customer rates. In settlement of that case, the Company agreed to conduct a disposition analysis of its river hydro fleet.

The Company started a process in 2022 to conduct the disposition analysis and ultimately determine a path forward for the Facilities. Potential disposition options included selling the Facilities, decommissioning the Facilities, or continuing to operate the Facilities. This process included engaging a third-party engineering firm, WSP, to provide an independent assessment of the disposition options. WSP's report that resulted from this assessment is provided as Exhibit A-8 (RTB-8). It also included development of internal business models supporting each option so that the financial impact was known. Finally,

the Company has been working closely with communities near the facilities through this entire process, and their input was significant in reaching the decision to sell the Facilities.

Q. What was WSP's conclusion?

A. WSP concluded that the lowest risk path forward is one in which Consumers Energy does not own the Facilities and the easiest way to achieve this is to divest the Facilities[1]. Their primary recommendation was to divest 11 of the 13 Facilities[2].facilities.[3]. The two other Facilities that were not recommended for divestment as a primary option were locations requiring major spillway repairs and the primary recommendation was decommissioning based on remediating safety risks and that the Facilities would not be marketable due to the cost of spillway repairs[4].

Q. Did the Company adopt the recommendation to explore selling the Facilities?

A. Yes. Sale of the Facilities could balance two important needs - to potentially lower costs for Consumers Energy's customers while continuing to care for communities that depend on the waterways created by the Facilities. As will be explained in Section IV of my testimony, the Company spent significant time developing a 60-year business case outlook for sale, decommissioning, and relicensing. The Company's analysis shows that the sale transaction the Company has negotiated is lower-cost than decommissioning or relicensing and comes with significantly less cost risk. Selling the Facilities also preserves the impoundments and the considerable economic benefits they provide to local communities. See Company witness Thompkins for details of the economic benefits by Facility. It preserves a way of life for impacted communities, people of Michigan, and Consumers

[1] See Exhibit A-8 (RTB-8), Executive Summary, page iii.
[2] See Exhibit A-8 (RTB-8), Table ES-1 and Table 41.
[3] See Exhibit A-?? (RTB-8), Table ES-1 and Table 41.
[4] See Exhibit A-8 (RTB-8), Sections 9.1.1 and 9.1.2,

Energy's coworkers. Safety is a big part of community impact, and the Company expended significant effort in vetting a counterparty and negotiating a transaction to ensure that Consumers Energy is putting the Facilities into the hands of a safe, financially competent company. Moreover, the employees working at the Facilities, and their safety mindsets and habits, are transferring to Confluence with the Facilities, which is even further assurance of safety.

Q. Why did the Company decide to include Rogers and Hardy in the sale if WSP did not recommend selling them as a primary recommendation?

A. Hardy is the largest Facility in the river hydro fleet and accounts for 24% of the total fleet production, so it would be of value to a potential purchaser. Not selling Hardy or Rogers would have resulted in the Company decommissioning these Facilities, which our business cases indicate are higher cost and higher cost-risk for our customers. Additionally, not including Rogers and Hardy in the sale would have left Croton as the lone Facility on the Muskegon River, which introduces cost challenges due to having workforce dedicated to a river system, but only having one Facility to oversee.

Q. Did other factors influence the Company's decision to review the Facilities' futures?

A. Yes, Consumers Energy's federal operating licenses for the Facilities will begin to expire in 2034 through 2041. Relicensing the Facilities is an extensive process that is estimated to take up to seven years. To allow for sufficient time to pursue relicensing (if that was the chosen path), the Company targeted completion of its disposition analysis at least seven years prior to the first relicensing deadline (i.e. 2027).

Q. Was Consumers Energy determined to sell the Facilities from the start?

A. No. The Company was committed only to reaching the best decision for its customers. When Consumers Energy started this process, the Company did not know how it would play out or conclude.

Q. Do the terms of the transaction provide the new owner with sufficient incentive to invest in necessary upgrades as they arise?

A. Yes. As an initial matter, Confluence will assume the license requirements for the Facilities which are imposed by FERC. The PPA price is designed to ensure that Confluence will have sufficient annual revenues to fund capital and maintenance, and Confluence will be incented to safely and reliably operate the Facilities so that it can receive revenue, through the PPA price, for the entire term of the PPA. Additionally, Confluence has access to equity from its parent, Hull Street Energy, which would also fund capital and maintenance. [CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

Q. There have been catastrophic failures at hydropower projects in Michigan that have resulted from failures to properly maintain those projects, as evidenced by the catastrophic failures of the Edenville and Sanford Facilities on the Tittabawassee River in 2020. How has Consumers Energy sought to avoid similar issues in the sale process for the Facilities?

A. Consumers Energy understands the public's concerns about the Facilities' safe operations and made that a priority throughout the sale process. The Company also recognizes that not all potential owners of hydroelectric generation facilities share the same vision, values,

and mission as Consumers Energy. However, Hull Street Energy has a demonstrated track record of operational success and safety improvements. As part of a Request for Proposal ("RFP") for the Facilities, the Company evaluated Hull Street Energy's successful record with other hydroelectric generation facilities and its financial resources. Company witness Monroe provides detailed information on Hull Street Energy's safety record. As license holders, Confluence will be required to work with FERC regulators to maintain the Facilities' record of safe operations and make enhancements when and where necessary, to meet current and future FERC safety and other license requirements. As set forth above, Confluence has committed capital resources available that will ensure the safe and compliant operation of the Facilities.

Confluence has built a multi-disciplinary team led by energy industry veterans who have successfully upgraded and operated more than 40 operating hydroelectric generation facilities. They have stated and demonstrated a commitment to safety and well-being of the employees, surrounding communities, and the local environment.

Q. As a private equity firm, Hull Street Energy has a track record of buying and reselling assets. Will it do the same with the Facilities?

A. While the Company ultimately does not control the Facilities after closing the sale, Confluence indicated an intention to hold the Facilities for a longer-term and they have made similar statements publicly following the sale announcement. Moreover, with the PPA, there is financial incentive for Confluence to continue ownership and operations. Additionally, any future sale of the Facilities would require FERC approval.

Q. How does the transaction affect the use of the 32,000 acres of land associated with the Facilities for the local communities?

A. All the property being sold as part of this transaction is contained, in part or in whole, within the FERC license boundary for the Facilities. Therefore, any change in use or ownership will need FERC approval. Additionally, the PSA provides for Confluence to take assignment of the assignable land leases and land access permits that the Company has granted to property owners around the Facilities. And, for the land access licenses and permits that the Company cannot assign to Confluence due to the terms of those licenses and permits, the Company and Confluence work together so that Confluence can replace those licenses and permits with new licenses and permits during the interim period prior to closing and after closing occurs These property rights have allowed local communities to use and enjoy the shorelines and impoundments of the Facilities. Consumers Energy anticipates that those uses will continue under Confluence's ownership.

SECTION II

SALE PROCESS

Q. Please provide an overview of the sale process.

A. In August of 2023, the Company announced its intent to conduct an RFP for selling the Facilities. In February of 2024, the Company issued a Stage 1 RFP with bids due in March of 2024. Stage 1 focused on bidder qualification and indicative transaction pricing. There were 41 counterparties that expressed interest in participating in the RFP. In March of 2024, the Company received 15 bids. The Company reviewed the bids through a rigorous evaluation and accepted seven of those bids to continue to Stage 2 of the RFP, which began in April of 2024. The eight bids that Consumers Energy rejected did not meet critical

criteria in the evaluation. Stage 2 of the RFP involved detailed due diligence and submission of final transaction pricing. In August of 2024, two of the seven accepted bidders submitted a final bid. The other five bidders electively decided to withdraw from the RFP. The Company commenced negotiations in October of 2024 and concluded negotiations in August of 2025.

Q. Why did Stage 1 have indicative pricing, not final pricing?

A. The purpose of Stage 1 was to determine transaction interest and allow the Company to thoroughly vet the financial, safety, and operation capabilities of each party. Final pricing would be dependent upon detailed due diligence, which did not occur until Stage 2 of the RFP.

Q. What were the bid criteria and evaluation?

A. The criteria included bid pricing, bid structure, corporate financial status, historical operating experience, safety program strength, FERC experience including license transfer, personnel plan, depth of community plans, and the evaluation team's overall assessment of the counterparty.

Q. What kind of due diligence occurred in Stage 2?

A. The Company created a data room for bidders to access critical information on the Facilities. The information included, but was not limited to, historical records, FERC correspondence, and capital and maintenance plans. The Company also hosted site visits for bidder inspections. The Company held management presentations at which the Company met face-to-face with the bidders to discuss the transaction at a high level. Finally, there was exchange and discussion on proposed transactional agreements.

Q. Why did the negotiations take approximately 12 months?

A. The transaction was extraordinarily complex, encompassing a significant amount of assets and land, coworker transition aspects, and commercial terms, as evidenced by the complexity and scope of the agreements that make up this transaction.

Q. Did the Company solicit bids for its Facilities on an individual site basis, fleet basis, or both?

A. The RFP solicited bids on both a site and fleet-wide basis.

Q. Did the Company consider both types of bids when considering sale arrangements?

A. No. The Company only considered bids to purchase the entirety of the Facilities, not selected sites. Since the Facilities located on the same river system operate in concert, it was not desirable to have different owners/operators on the same river system. Moreover, due to the complexity of this transaction and the desire to reach a sale agreement in a reasonable amount of time, the Company elected to engage a single counterparty for the transaction versus potentially up to 13 different counterparties.

SECTION III

TRANSACTION SUMMARY

Q. Please summarize the sale transaction agreements.

A. The transaction consists of four primary agreements: the PSA, the PPA, the EIA (which is Exhibit M-1 to the PSA), and the RDA (which is Exhibit T to the PSA). The agreements work together as a package to both effectuate the transaction and appropriately transfer the Facilities, including equipment and land, along with associated liabilities.

Q. Please describe the PSA.

A. The PSA sets forth the terms of the sale of the Facilities. Most importantly those terms set forth the complete transfer of the Facilities, including the real property, land rights, generating equipment and other tangible and intangible personal property (collectively referred to as the "Project Assets"), to Confluence as well as the transfer of substantially all associated liabilities, including environmental liabilities. The PSA is structured as an "as-is" sale, with the qualifications to that standard in the Company's representations and warranties. The PSA also provides for the transfer of the Company's employees that support the Facilities to Confluence (or an affiliate of Confluence).

The aggregate price of the acquisition of the Projects is $13.00, subject to limited adjustments for pre- and post-closing proration credits for certain costs of operating the Facilities (including property taxes, utility expenses, and lease payments).

The PSA includes customary conditions for closing, including obtaining approvals from the MPSC, FERC, the Federal Communications Commission, and the Federal Trade Commission/Department of Justice. All the closing conditions must be satisfied by the "Outside Closing Date," which is one year from the date the Company submits its filing for FERC and MPSC approval (the "Required Regulatory Approvals"). However, the Outside Closing Date will extend on a day-to-day basis for the Required Regulatory Approvals, up to two years after the initial filing date.

The PSA requires Consumers Energy to conduct its business with respect to the Facilities in the ordinary course and consistent with prudent utility practices up to closing. [CONFIDENTIAL] [redacted]

[redacted] [END CONFIDENTIAL]

Q. Please describe the PPA.

A. Under the 30-year PPA, Confluence will sell energy, capacity, and environmental attributes (RECs) to the Company on an as-generated basis, from each of the 13 hydro plants. [CONFIDENTIAL] [redacted] [END CONFIDENTIAL]

The PPA price for the first contract year is $160.00/MWh, with an annual 2.5% increase thereafter. However, the PPA price is subject to adjustment for (a) the Rogers spillway project; (b) the Engineering, Procurement, and Construction ("EPC") Agreement for the Hardy auxiliary spillway project; (c) material casualty under the PSA; (d) material condemnation under the PSA; (e) the Company's indemnification obligations under the PSA; (f) Confluence's title objections under the PSA; or (g) the Army Corp of Engineers Loan. These adjustments are explained in Exhibit E of the PPA.

Q. Please explain the PPA price adjustment for the Rogers spillway project.

A. The original capital and operating and maintenance ("O&M") plans provided to the bidders included costs for replacement of the Rogers spillway. Since providing those plans, the Company has determined that it can avoid the Spillway project by purchasing several downstream properties and completing a reduced scope of work. That reduced scope of work has an estimated cost of $16,841,000. The PPA sets forth the list of reduced scope projects. Should Confluence spend more than $16,841,000 for these specific projects, the

PPA price will be increased by $0.133/MWh per million dollars of cost overrun, if indeed there is any cost overrun. As stated above, the base PPA price is $160.00/MWh escalating at 2.5% every 12 months. The total of all price adjustments identified in Tables 3 and 4 of the PPA are capped at $165.00/MWh in the first year of the PPA and increases by 2.5% every 12 months.

Q. Please explain the PPA price adjustment for the EPC Agreement for the Hardy auxiliary spillway project.

A. The Company's EPC contract for the Hardy auxiliary project is contractually capped at $216,500,000. The Company put the Hardy auxiliary project on hold in May of 2025 since FERC had not yet approved the project. The Company intends to keep the project on hold until the sale is approved, and the transaction closes, for purposes of making a clean transition in project oversight. The EPC contract allows for a price increase if the project is delayed to account for cost increases in such things as materials and workforce. The Company agreed to increase the PPA rate by $0.133/MWh per million dollars of cost increase in the EPC contract, if indeed there is any cost increase.

As stated above, the base PPA price is $160.00/MWh escalating at 2.5% every 12 months. The total of all price adjustments identified in Tables 3 and 4 of the PPA are capped at $165.00/MWh in the first year of the PPA and increases by 2.5% every 12 months.

[CONFIDENTIAL] [redacted]

[redacted] [END CONFIDENTIAL]

Q. Please describe the RDA.

A. The RDA provides for payment from the Company to Confluence, in the unlikely event of a future regulatory disallowance order from the MPSC for all or a portion of the PPA payments and Confluence's subsequent termination of the PPA (which covers all 13 Facilities). Under the PPA, if the MPSC issues an order or orders which deny the Company full recovery for the charges paid to Confluence under the PPA, then the Company may adjust the future charges paid to the recoverable amount determined by the MPSC and also recover the previously paid charges that are subsequently disallowed. After the adjustment goes into effect, or previously paid amounts are recovered, Confluence has the right to, and must, terminate the PPA for the remainder of the term, in order to trigger the RDA. The PPA termination following a disallowance of PPA payments triggers Confluence's right to seek recovery under the RDA.

Following an RDA demand from Confluence, the Company would be required to pay an amount equal to the lesser of the "Economic Loss Payment" and $250,000,000, plus

any outstanding amounts due under the PPA. Once the payment is made, the parties generally waive any further claims under the PPA. However, Confluence will retain the right to sue the Company under the PPA [CONFIDENTIAL] [redacted] [END CONFIDENTIAL] and the Company reserves the right to a counterclaim. If Confluence is successful in such a claim, any recovered damages would be netted against other payments under the RDA, such that Confluence is not permitted double recovery.

Q. Please describe the EIA.

A. As set forth above, one of the most important aspects of the sale of the Facilities is the complete transfer of those Facilities, including equipment and associated land, to a new owner, along with any liabilities related to those Facilities, including any past, present, or future environmental liabilities. The EIA is the mechanism that ensures the continued transfer of environmental liabilities into the future. Under the EIA, Confluence will indemnify the Company from losses and claims relating to the "Assumed Environmental Liabilities" regardless of whether such liability arose before, on, or after Closing under the PSA.[5] The EIA also outlines the steps and actions that Confluence must take if the Company is threatened with a claim or named in a claim, to confirm that Confluence will indemnify the Company. The EIA does not have a defined term and therefore continues indefinitely.

[5] Under the PSA, "Assumed Environmental Liabilities" include all liabilities that are not "Excluded Environmental Liabilities." This narrow carveout of "Excluded Environmental Liabilities" includes liabilities caused by the acts or omissions of Consumers Energy on the easements that will be retained by Consumers Energy on the land associated with the Facilities to operate its electric distribution equipment after the closing of the sale of the Facilities.

Confluence's EIA obligations include providing the Company with $2,500,000 in the form of cash to be held in escrow by the Company or by providing a letter of credit. Such security shall remain in place for the duration of the EIA and is subject to unlimited replenishment if the Company ever draws on the security. The Company is entitled to draw on the security for the costs actually incurred for which a remedy is provided under the EIA. After exhausting the security, including any timely replenishment of such security, the Company has the right to setoff costs actually incurred for which a remedy is provided under the EIA against any and all amounts or other compensation due and owing by the Company under the PPA.

Confluence will obtain and maintain pollution legal liability insurance ("PLLI") throughout the term of the EIA. PLLI provides insurance coverage to the Company to the extent that Confluence fails to meet its indemnification obligations. The EIA provides for the Confluence subsidiaries, which will ultimately own each Project, to be jointly and severally liable with Confluence for all of Confluence's indemnity and payment obligations, as set forth in the EIA.

SECTION IV

BUSINESS CASE

Q. Please explain the business case effort undertaken to evaluate future options for the river hydro generation fleet.

A. The Company developed business case outlooks for the three different options for the future of the Facilities (also called disposition options): (i) sale to Confluence, (ii) decommissioning, and (iii) continued ownership (also called relicensing). The business cases compared the annual total costs for each option based on a set of assumptions that

will be explained later. The Company then converted the annual total costs to a net present value ("NPV") to compare the relative financial outcome of each option. The Company included some variance analysis to ensure that the financial outcomes reflect a reasonable expectation of variance for key assumptions.

Q. What are the common assumptions used in the business cases?

A. Exhibit A-3 (RTB-3) presents the common assumptions, consistent across all cases, which the Company used in the development of the business case evaluations. These assumptions form the foundation for comparing alternative scenarios.

Q. What is the basis for the assumption for Discount Rate and Cost of Capital in Exhibit A-3 (RTB-3)?

A. The Discount Rate and Cost of Capital are both assumed to be 7.38%, which is the prevailing value used internally for the Company's economic analysis. The rate of 7.38% is based upon the pre-tax weighted average cost of capital established in the March 21, 2025 Order in the Company's 2024 Electric Rate Case No. U-21585.

Q. What is the basis for the starting Replacement Power Cost value being $79/MWh and the inflation rate for Replacement Power being 0%?

A. This assumption is based on the view that the Company could enter a long-term contract at a flat rate of $79/MWh. The Company solicited bids for a clean energy PPA in 2025. One of the bids was sourced from river hydro generation. That bid was $79/MWh which includes energy, capacity, and RECs associated with the resource. This value was selected as a representative market-based cost for replacement power. The Company applied an inflation rate to Replacement Power costs in its variance analysis.

Q. What is the assumption for the Financial Compensation Mechanism ("FCM") in Exhibit A-3 (RTB-3)?

A. Exhibit A-3 (RTB-3) includes an FCM value of 8.75%, which represents the annual cost recovery rate approved for the Company to apply to PPAs. The FCM rate of 8.75% is based upon the pre-tax weighted average cost of permanent capital established in the March 21, 2025 Order in the Company's 2024 Electric Rate Case No. U-21585.

Q. What is the basis for recovery of a FCM on the proposed PPA?

A. Michigan Compiled Laws (MCL) 460.1028(8) states the following:

> If an electric provider whose rates are regulated by the commission enters into a purchase power agreement for renewable energy resources or a third-party contract for an energy storage system or clean energy system with an entity that is not an affiliate, the commission shall authorize an annual financial incentive for the electric provider. The financial incentive shall be calculated as the product of contract payments in that year multiplied by the electric provider's pre-tax weighted average cost of permanent capital comprised of long-term debt obligations and equity of the electric provider's total capital structure as determined by the commission's final order in the electric provider's most recent general rate case. The pre-tax weighted average cost of permanent capital used to calculate the financial incentive shall not be fixed throughout the entire term of the contract at the pre-tax weighted average cost of capital applicable in the first year but shall be updated based on the commission's final order in each succeeding general rate case for the electric provider. The financial incentive shall apply to each contract described in this subsection from the date the contract is executed for the entire term of the contract. This subsection applies to any contract entered into after June 30, 2024.

As such, the recovery of an FCM is required for these contracts.

Q. What is the basis for the Yearly Production number?

A. The Yearly Production figure is derived from a 10-year average (2013-2023) of actual generation across the 13 sites included in the evaluation. Use of a historical average ensures a representative and stable estimate of expected output.

Q. Why is the Evaluation Ending Year 2086?

A. The Evaluation End Year of 2086 reflects the full lifecycle of the assets, including decommissioning. The assumption is that the Company, if it were to continue operating the river hydro fleet, will receive a 50-year license renewal beginning in 2034, extending operations through 2084. Decommissioning activities are expected to occur over the subsequent two years, concluding in 2086. This timeline ensures that all relevant costs and impacts are captured in each of the business case scenarios.

Q. What is the assumption for the PPA period?

A. The PPA is assumed to commence on January 1, 2027, and extend for a 30-year term.

Q. Do the business cases consider the value of energy, capacity, and RECs?

A. No. Annual production in each year across each business case is equivalent at 439,462 MWh, so the value of energy, capacity, and RECs are excluded because it would be consistent across all three scenarios. Including the value would identically impact each business case; therefore, for simplicity and clarity reasons, it was not included in the business case evaluations. Note that Company witness Coker's rate impact analysis does include the value of energy, capacity, and RECs since that value will be realized by Consumers Energy's customers.

Q. What are the assumptions used in the sale business case?

A. Exhibit A-4 (RTB-4) calculates the main inputs into the annual total costs for the sale business case. It includes projected transaction costs, PPA costs, and replacement power costs over the evaluation period.

Q. What does column (b) represent in Exhibit A-4 (RTB-4)?

A. Column (b) represents the Company's estimated closing costs to execute the sale. These include an estimate of both transaction costs estimated at $12.538 million (e.g. legal fees, consultant fees, hiring and training employees that will be needed by Confluence, and internal company labor to facilitate the transaction) and employee separation costs estimated at $14.5 million.

Q. Why does the Replacement Power Cost in column (h) remain constant?

A. The Replacement Power Cost is calculated by multiplying the replacement MWh (column g) by the assumed Replacement Power Cost contained in Exhibit A-3 (RTB-3). For the base case, the Company assumes Replacement Power Cost is flat over time, without escalation. There was additional variance analysis done to understand the impact of varying the Replacement Power Cost on the total cost of sale.

Q. What are the assumptions used in the decommissioning business case?

A. Exhibit A-5 (RTB-5) projects the annual total costs associated with decommissioning the Facilities. This scenario assumes the Company will operate the Facilities through the end of their current license period and then retire them sequentially. The order of retirements is based on the Company's assessment of site-specific risk, beginning with the highest risk locations. The Facilities are assumed to remain operational until physical decommissioning

begins. It is further assumed that FERC will grant annual license extensions, contingent on the Company's submission of a reviewed and approved decommissioning plan.

Q. How was column (b) developed in Exhibit A-5 (RTB-5)?

A. Column (b) represents the Company's estimated capital costs under the decommissioning scenario. These costs reflect expenditures necessary to maintain safe and compliant operations until each Facility is retired. The capital items are a subset of the 2024–2028 Long-Term Financial Plan, limited to those required for FERC compliance and safety. No investments related to performance improvement or life extension are included.

Q. How was column (c) developed in Exhibit A-5 (RTB-5)?

A. Column (c) reflects the Company's estimated O&M costs during the decommissioning scenario. These costs support continued safe and compliant operations until retirement. The estimates exclude potential incremental costs from FERC-mandated Comprehensive Assessments. The Company assumes a strategic approach to repairs, prioritizing cost minimization given the limited remaining life of the units.

Q. How was column (d) developed in Exhibit A-5 (RTB-5)?

A. Column (d) identifies the total decommissioning cost for the Facilities. The cost estimate is based on an estimate made by WSP in support of the Company's 2025 Depreciation filing. WSP's decommissioning costs are provided in Exhibit A-9 (RTB-9). To reflect the full scope of project execution, the base estimates provided by WSP were increased by 40% to account for Company overheads, engineering services, required studies, permitting, internal project management, legal fees, etc. Each Facility was internally evaluated for potential environmental uncertainties, and additional costs were added to the decommissioning cost estimate based on the findings of that evaluation.

Q. How does Exhibit A-5 (RTB-5) account for inflation and discounting in the decommissioning scenario?

A. The cost estimates in Exhibit A-5 (RTB-5) incorporate a discount rate of 7.38% and the capital, O&M, and decommissioning costs escalate at an inflation rate of 2.00%. These assumptions are consistent with the Company's long-term financial planning standards and ensure that future costs are appropriately valued in present-day terms.

Q. How does the decommissioning scenario impact energy production and replacement power needs?

A. As each Facility is retired, Exhibit A-5 (RTB-5) models a gradual decline in production. Correspondingly, Replacement Power requirements and costs increase. These are reflected in columns (f) and (g), which show the replacement MWh and associated power costs. The Company assumes a fixed Replacement Power cost of $79/MWh, consistent with Exhibit A-3 (RTB-3).

Q. What are the assumptions used in the relicensing business case?

A. Exhibit A-6 (RTB-6) shows the projected revenue requirements for relicensing Facilities. This scenario assumes the Company will apply for and be granted a 50-year extension from FERC to continue operation. The extension will start in series with the current license expiry. This scenario assumes decommissioning will occur upon the completion of the license extension. Importantly, the cost estimates in this scenario do not include highly likely cost increases associated with future relicensing requirements or evolving FERC regulatory requirements. As such, the cost estimates should be viewed as conservatively low.

Q. How was column (c) developed in Exhibit A-6 (RTB-6)?

Column (c) represents the Company's estimated capital costs under the relicensing scenario. These costs reflect expenditures necessary to maintain safe and compliant operations until each Facility is retired. The 2027-2034 capital items are a subset of the 2024–2028 Long-Term Financial Plan and the 10-year strategy plan. For 2035 and beyond, these estimates are based on WSP's Hydro Roadmap study of known regulatory and life extension projects along with the average capital maintenance spend based on a three-year average.

Q. How was column (d) developed in Exhibit A-6 (RTB-6)?

A. Column (d) reflects the Company's estimated O&M costs during the relicense scenario. These costs support continued safe and compliant operations until retirement. The 2027-2028 capital items are a subset of the 2024–2028 Long-Term Financial Plan. For 2029 and beyond, the estimate considers known life extension projects added to the projected regulatory and maintenance spend.

Q. How does Exhibit A-6 (RTB-6) account for inflation and discounting in the relicensing scenario?

A. The cost estimates in Exhibit A-6 (RTB-6) incorporate a discount rate of 7.38% and the capital, O&M, and decommissioning costs escalate at an inflation rate of 2.00%. These assumptions are consistent with the Company's long-term financial planning standards and ensure that future costs are appropriately valued in present-day terms.

Q. What variance analysis did the Company perform on these business cases?

A. Exhibit A-7 (RTB-7) presents the results of variance analyses conducted to evaluate the potential range of outcomes for each disposition scenario. It includes adjustments to key

variables to illustrate both lower- and higher-end impacts on the NPV of the costs identified in Exhibits A-4 (RTB-4), A-5 (RTB-5), and A-6 (RTB-6).

Q. What is the purpose of the graphical variance summary in Exhibit A-7 (RTB-7)?

A. The graphical variance summary provides a visual comparison of NPV outcomes across the three disposition scenarios—Sale, Decommission, and Relicense—under low, base, and high sensitivity assumptions. It illustrates the range of potential financial outcomes and supports decision making by highlighting which scenario is lowest cost and has lowest cost risk under varying conditions.

Q. What do the "Low," "Base," and "High" columns represent in Exhibit A-7 (RTB-7)?

A. These columns represent the range of NPV outcomes for each scenario based on sensitivity adjustments. Low reflects lower cost assumptions (e.g. lower replacement power costs, reduced production, and lower remediation risk adjustments). Base reflects the most likely assumptions. High reflects higher cost assumptions (e.g. higher replacement power costs, increased production on PPAs, and full risk adjustments).

Q. Describe what was adjusted in the Low-End Sale sensitivity.

A. The starting replacement power cost was reduced from $79/MWh (base) to $60/MWh, with no escalation applied. This reflects a scenario where low-cost renewable energy is available after the PPA term ends. Additionally, annual production was reduced to 90% of the average, which lowers the sale cost during the contract period and results in a lower overall NPV of annual cash flows.

Q. Describe what was adjusted in the High-End Sale sensitivity.

A. The starting replacement power cost was increased to $80/MWh and escalated at 2% annually, representing a higher-cost renewable energy scenario post-PPA. Annual

production was increased to 110% of the average, which raises the sale cost during the contract period and results in a higher overall NPV of annual cash flows.

Q. Why weren't any other variables adjusted?

A. Variables such as discount rate, cost of capital, inflation, and FCM were held constant across all scenarios. Adjusting these would shift all NPVs in the same direction, without materially affecting the relative comparison between scenarios. These values are aligned with Company standards and consistent with other financial analyses.

Q. Describe what was adjusted in the Low-End Decommission sensitivity.

A. The starting replacement power cost was reduced to $60/MWh, with no escalation, representing a low-cost renewable energy scenario after unit retirement, and the additional costs associated with the Company's internal evaluation for potential environmental uncertainties was removed from the decommissioning cost estimate.

Q. Describe what was adjusted in the High-End Decommission sensitivity.

A. The Starting Replacement Power cost was increased to $80/MWh and escalated 2% annually. This is intended to represent a high cost for replacement renewable energy after the units are removed from service.

Q. Describe what was adjusted in the Low-End Relicense sensitivity.

A. The additional costs associated with the Company's internal evaluation for potential environmental uncertainties was removed from the decommissioning cost estimate to reflect a lower-cost scenario. Additionally, a cost multiplier of 85% was applied to represent downside cost potential.

Q. Describe what was adjusted in the High-End Relicense sensitivity.

A. A cost multiplier of 115% was applied to represent upside cost potential.

Q. Please summarize the key takeaway from the graphical variance summary in Exhibit A-7 (RTB-7)?

A. It is clear from the graphical variance summary that selling the Facilities is the lowest cost option. It also has the least cost-risk based on the relatively narrow range of costs that result after applying variation analysis.

SECTION V

Responses to Certain Filing Requirements from MCL 460.6q and R 460.303

Q. Please provide a description of Consumers Energy, the electrical and gas service territory it serves, and the significant real and personal property owned, operated, and controlled by Consumers Energy.

A. Consumers Energy is Michigan's second largest electric and gas utility, providing service to more than 6 million residents and businesses in all 68 counties of the Lower Peninsula of Michigan. Consumers Energy is the primary subsidiary of Jackson, Michigan-based CMS Energy Corporation. Consumers Energy's electric business currently operates three coal-fired, seven natural gas-fired, and two oil- and gas-fired generating units, 13 hydroelectric plants, a pumped storage generating plant, wind turbines, solar generation, battery storage, and several combustion-turbine plants. Consumers Energy's distribution system consists of: 270 miles of high-voltage distribution overhead lines operating at 138 kV, four miles of high-voltage distribution underground lines operating at 138 kV, 4,646 miles of high-voltage distribution overhead lines operating at 46 kV and 69 kV, 18 miles of high-voltage distribution underground lines operating at 46 kV, 81,924 miles of electric distribution overhead lines, 9,775 miles of underground distribution lines, and 1,098 substations with an aggregate transformer capacity of 28 million kVA. The

Company's gas business includes a Gas Transmission and Storage system, which is an integration of approximately 2,342 miles of transmission pipeline, eight compressor stations with 48 active units with approximately 153,000 installed and available horsepower, 15 gas storage fields[6] with a maximum working storage capacity of 154 billion cubic feet ("Bcf"), seven primary interconnect locations with five interstate pipelines, and about 100 city gate stations which are the connections to the Company's gas distribution system. The Company's gas distribution system includes more than 28,000 miles of distribution mains.

Q. What effect will the transaction have on competition and rates?

A. At this time, Consumers Energy does not believe the transaction will have any effect on electric competition because it will not result in any new generation resources being added to the market and Consumers Energy will continue to purchase all of the energy and capacity from these plants. As discussed further below, the Company is required to make certain filings with the Federal Trade Commission and FERC which will also review the effect of the transaction on commerce and competition. To the extent that those filings conclude that there is any impact on competition resulting from the transaction, the Company will update its information in this case accordingly. Company witness Coker addresses the effect of the transaction on rates in his direct testimony.

[6] Consumers Energy will be closing on the sale of its Riverside Storage field later this year.

Q. What effect will the transaction have on the degree of risk assumed by utility customers for liabilities associated with activities that are not regulated by the commission?

A. As explained throughout my testimony the transaction significantly reduces the risk assumed by the Company's customers for long-term liabilities associated with FERC licensing requirements to operate the plants and environmental liabilities associated with eventual decommissioning.

Q. Will this transaction affect Consumers Energy's commitment to maintain existing corporate offices located in Michigan?

A. No. Consumers Energy is not changing the location of its corporate offices as a result of this transaction. Furthermore, Confluence will have a corporate office in Michigan.

Q. Will the proposed transaction have any effect on market power?

A. The PSA provides that Consumers Energy and Confluence will make a Hart-Scott-Rodino filing with the Federal Trade Commission and Department of Justice, which will review whether the proposed sale of the Facilities impacts commerce in the United States under antitrust laws. The PSA also provides for a FERC Section 203 filing. In such a filing, FERC will consider whether the proposed sale of the Facilities is in the public interest and will examine the sale's effect on competition, rates and regulation, and the potential for cross-subsidization. The Company currently anticipates that those filings will support the conclusion that the transaction does not have any effect on market power.

Q. Please describe any new entities created to facilitate the transaction.

A. Consumers Energy is not creating a new entity for this transaction. Hull Street Energy is creating a wholly owned subsidiary called Confluence Hydro.

Q. Will the proposed transaction have an adverse impact on the provision of safe, reliable, and adequate energy service in this state?

A. No. This transaction will have no adverse impact on safety, reliability, and adequacy of energy service in Michigan. The Facilities will remain operational and Consumers Energy will continue to purchase all of the energy and capacity produced by the Facilities. The buyer is experienced and financially sound with a track record of safe and responsible operation of hydro facilities.

Q. Is the proposed transaction consistent with public policy and interest?

A. Yes. This sale transaction is consistent with public policy and is in the public interest, as demonstrated in Sections I, III, and IV of my testimony. The proposed transaction provides the lowest cost option for the future of these Facilities and will result in lower customer rates compared to relicensing or decommissioning. The transaction transfers liabilities associated with the Facilities that otherwise present future rate risks for customers while still preserving the Facilities and their related impoundments for the communities that rely on them for recreation and tourism. Finally, the transaction transfers the Facilities to an experienced and financially sound buyer with a track record of safe and responsible operation of hydro facilities.

SECTION VI

Next Steps

Q. What are the next steps in this transaction?

A. Timely regulatory approval is critical as it brings certainty to impacted communities and employees. In October of 2025, Consumers Energy will request FERC to approve the license transfer and, at the same time, request approval from the MPSC for sale of the

Facilities. If approved by FERC and the MPSC, a closing date will be set for shortly afterward.

Q. How will the Facilities be operated differently during the period of time it takes to get approval?

A. The Company will be the license holder of the Facilities until FERC approves the license transfer and the MPSC approves the sale transaction. As license holder, the Company will continue to invest, maintain, and operate the facilities in a safe and regulatory compliant manner.

Q. Does this conclude your direct testimony?

A. Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)))))))	Case No. U-21985

REDACTED

EXHIBITS

OF

RICHARD T. BLUMENSTOCK

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025

REDACTED

Execution Version

PURCHASE AND SALE AGREEMENT

BETWEEN

CONSUMERS ENERGY COMPANY

AND

CONFLUENCE HYDRO, LLC

TABLE OF CONTENTS

Page

ARTICLE 1 DEFINITIONS 1

Section 1.1. Definitions 1
Section 1.2. Terms Generally. 22

ARTICLE 2 AGREEMENT; PURCHASE PRICE; ASSUMED LIABILITIES AND EXCLUDED LIABILITIES 23

Section 2.1. Agreement to Sell and Purchase; Excluded Assets; Assumed Liabilities; Excluded Liabilities 23
Section 2.2. Purchase Price 25
Section 2.3. Intended Tax Treatment and Purchase Price Allocation 25
Section 2.4. Withholding. 27

ARTICLE 3 SURVEY AND TITLE COMMITMENT 27

Section 3.1. Title and Survey 27

ARTICLE 4 CONDITIONS PRECEDENT, CASUALTY DAMAGE, CONDEMNATION 30

Section 4.1. Conditions Precedent Favoring Purchaser 30
Section 4.2. Conditions Precedent Favoring Seller 32
Section 4.3. Risk of Casualty 34
Section 4.4. Risk of Condemnation 34
Section 4.5. Limitation on Casualty and Condemnation Relief. 35
Section 4.6. Allocation of Condemnation Proceeds 35

ARTICLE 5 REPRESENTATIONS AND WARRANTIES OF SELLER 36

Section 5.1. Organization, Authority, Validity and Non-Contravention 36
Section 5.2. Solvency 36
Section 5.3. Litigation 36
Section 5.4. No Conflicts 37
Section 5.5. Seller Third Party Consents 37
Section 5.6. Title to Project Assets 38
Section 5.7. Real Property Interests. 38
Section 5.8. Reserved. 39
Section 5.9. Tax Matters 39
Section 5.10. Material Contracts 40
Section 5.11. Brokers 41
Section 5.12. Legal Compliance 41
Section 5.13. Environmental Compliance 41
Section 5.14. Permits 43
Section 5.15. Insurance 43
Section 5.16. Employment Matters 43
Section 5.17. Employee Benefit Matters 46
Section 5.18. Anti-Money Laundering and Anti-Terrorism Laws 48
Section 5.19. Support Obligations. 48
Section 5.20. No Other Representations or Warranties. 48

Section 5.21. Due Diligence 49

ARTICLE 6 REPRESENTATIONS AND WARRANTIES OF PURCHASER 49

Section 6.1. Organization, Authority, Validity and Non-Contravention. 49
Section 6.2. Solvency 49
Section 6.3. Litigation 50
Section 6.4. No Conflicts 50
Section 6.5. Purchaser Third Party Consents 50
Section 6.6. Brokers 51
Section 6.7. Anti-Money Laundering and Anti-Terrorism Laws 51
Section 6.8. Inspection. 51
Section 6.9. No Other Representations or Warranties. 51

ARTICLE 7 COVENANTS OF THE PARTIES 52

Section 7.1. Reserved 52
Section 7.2. Use of Seller's Marks 52
Section 7.3. Exclusivity. 52
Section 7.4. Access. 52
Section 7.5. Inspections. 53
Section 7.6. Employee Matters 54
Section 7.7. Operation and Maintenance of Project Assets 57
Section 7.8. R&W Policy 59
Section 7.9. Confidentiality 60
Section 7.10. Memorandum of Environmental Indemnity Agreement 61
Section 7.11. PLLI 61
Section 7.12. Governmental Approvals; Required Consents 62
Section 7.13. Transition Services Agreement 65
Section 7.14. Interconnection Agreements; Transfer of CPNodes. 65
Section 7.15. Excluded Permits and Licenses; Seller Required Consents after Closing. 66
Section 7.16. Disclosure Schedules Updates. 66
Section 7.17. Retention of and Access to Books and Records. 67
Section 7.18. Support Obligations. 68

ARTICLE 8 CLOSING 68

Section 8.1. Closing Date 68
Section 8.2. Seller's Deliveries 68
Section 8.3. Purchaser's Deliveries 70
Section 8.4. Costs and Prorations 72
Section 8.5. Tax Matters. 76

ARTICLE 9 INDEMNIFICATION 76

Section 9.1. Survival. 76
Section 9.2. Indemnity by Seller 77
Section 9.3. Indemnity by Purchaser 77
Section 9.4. Claims for Indemnification 78
Section 9.5. Response Notice; Uncontested Claims 78
Section 9.6. Setoff; Adjustment of PPA Price 78
Section 9.7. Third Person Claims 79
Section 9.8. Mitigation 80

Section 9.9. Tax Treatment of Certain Post-Closing Payments 80

ARTICLE 10 LIMITATION OF LIABILITY; LIMITED REMEDIES AND DAMAGES . 80

Section 10.1. Limitation of Liability 80
Section 10.2. Exclusive Remedy 81
Section 10.3. Limitation on Damages 81

ARTICLE 11 TERMINATION 81

Section 11.1. Termination 81
Section 11.2. Effect of Termination Prior to Closing 83
Section 11.3. Payment of Purchaser Transaction Expenses 83
Section 11.4. Payment of Seller Transaction Expenses 83
Section 11.5. Liquidated Damages 83

ARTICLE 12 DISPUTE RESOLUTION 84

Section 12.1. Dispute Resolution 84

ARTICLE 13 MISCELLANEOUS 84

Section 13.1. Entire Agreement 84
Section 13.2. Binding On Successors and Assigns 84
Section 13.3. Assignment 84
Section 13.4. Waiver 84
Section 13.5. Governing Law; Jurisdiction 85
Section 13.6. Counterparts 85
Section 13.7. Notices 85
Section 13.8. Attorneys' Fees 86
Section 13.9. IRS Real Estate Sales Reporting 86
Section 13.10. Modification of Agreement 87
Section 13.11. Knowledge 87
Section 13.12. Descriptive Headings; Word Meaning 87
Section 13.13. Time of the Essence 87
Section 13.14. Construction of Agreement 87
Section 13.15. Severability 87
Section 13.16. No Recording 88
Section 13.17. No Implied Agreement 88
Section 13.18. Facsimile Signatures 88
Section 13.19. Publicity 88
Section 13.20. Further Assurances 88

EXHIBITS

Exhibit A-1	-	Description of the Fee Simple Real Property
Exhibit A-2	-	Project Descriptions
Exhibit A-3	-	Descriptions of the Residential Fee Simple Real Property
Exhibit B	-	Substations
Exhibit C	-	Form of Temporary Substation Easements
Exhibit D	-	Shoreline Licenses
Exhibit E-1	-	Form of Quitclaim Deed
Exhibit E-2	-	Form of Covenant Deed for Residential Fee Simple Real Property
Exhibit F	-	Form of Bill of Sale and General Assignment
Exhibit G	-	Leases
Exhibit H	-	Form of Assignment and Assumption of Real Property Agreements
Exhibit I	-	[Reserved]
Exhibit J-1	-	Form of Secretary's Certificate - Seller
Exhibit J-2	-	Form of Closing Certificate - Seller
Exhibit K	-	Form of Owner's Affidavit
Exhibit L-1	-	Form of Secretary's Certificate - Purchaser
Exhibit L-2	-	Form of Closing Certificate - Purchaser
Exhibit M-1	-	Environmental Indemnity Agreement
Exhibit M-2	-	Memorandum of Environmental Indemnity Agreement
Exhibit N	-	Pollution Legal Liability Insurance Policy
Exhibit O	-	Reserved Easements
Exhibit P	-	Form of Transition Services Agreement
Exhibit Q	-	METC Easements
Exhibit R	-	Seller's Marks
Exhibit S	-	Form of Consumers Interconnection Agreement
Exhibit T	-	Form of Regulatory Disallowance Agreement
Exhibit U	-	Flowage Easements
Exhibit V	-	Internal Mapping
Exhibit W-1	-	Form of Memorandum of Understanding
Exhibit W-2	-	Form of Union Notice
Exhibit X	-	Equity Commitment Letter

DISCLOSURE SCHEDULES

Schedule 1.1(a)	-	FERC Licenses
Schedule 1.1(b)	-	Tangible Personal Property
Schedule 1.1(c)	-	FCC Licenses
Schedule 1.1(d)	-	Additional Diligence Materials
Schedule 2.1(b)	-	Excluded Assets
Schedule 2.1(d)	-	Excluded Liabilities
Schedule 3.1(e)	-	Title and Survey (Encumbrances)
Schedule 4.1(j)	-	Purchaser Regulatory Approvals
Schedule 5.3(a)	-	No Actions
Schedule 5.5	-	Seller Third Party Consents
Schedule 5.6(a)	-	Project Assets (Title)
Schedule 5.6(c)	-	Project Assets (Condemnation)
Schedule 5.6(d)	-	Project Assets (Sufficiency)
Schedule 5.6(e)	-	Project Assets (FERC Licenses)
Schedule 5.7(a)	-	Real Property Interests
Schedule 5.9(g)	-	Seller Tax Returns (Proceedings)
Schedule 5.9(l)	-	Seller Tax Returns (Jurisdictions)
Schedule 5.10(a)	-	Material Contracts
Schedule 5.10(b)	-	Material Contracts (Enforceability)
Schedule 5.10(c)	-	Material Contracts (Breaches or Defaults)
Schedule 5.10(d)	-	Material Contracts (Payments)
Schedule 5.10(f)	-	Material Contracts (Third Party Rights)
Schedule 5.11	-	Broker Fees
Schedule 5.12(a)	-	Legal Compliance (Applicable Laws)
Schedule 5.12(b)	-	Legal Compliance (Notices)
Schedule 5.13(a)	-	Environmental Compliance (Environmental Laws)
Schedule 5.13(b)	-	Environmental Compliance (Notices)
Schedule 5.13(c)	-	Environmental Compliance (Material Environmental Permits)
Schedule 5.14(a)	-	Permits (Material Permits)
Schedule 5.16(a)	-	Employment Matters (Non-Union Employees)
Schedule 5.16(b)	-	Employment Matters (Union Employees)
Schedule 5.17(a)	-	Employee Benefit Matters (Plans)
Schedule 5.17(a)(iv)	-	Employee Benefit Matters (Title IV)
Schedule 5.17(a)(v)	-	Employee Benefit Matters (COBRA)
Schedule 5.17(a)(ix)	-	Employee Benefit Matters (Severance)
Schedule 5.19	-	Support Obligations
Schedule 6.5	-	Purchaser Third Party Consents
Schedule 7.6(a)	-	Excluded Employees
Schedule 7.7(d)	-	Operation and Maintenance of Project Assets
Schedule 8.4(b)(i)(C)	-	Property Taxes (Prorations)

PURCHASE AND SALE AGREEMENT

This **PURCHASE AND SALE AGREEMENT** is made and entered into effective as of September 3, 2025 (the "Effective Date") by and between **CONSUMERS ENERGY COMPANY**, a Michigan corporation ("Seller"), and **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("Purchaser"). Seller and Purchaser are sometimes referred to herein as a "Party" and collectively as the "Parties".

RECITALS

1. Seller owns (a) the hydroelectric project known as the Alcona Hydroelectric Project, located on the Au Sable River near Glennie, Michigan (as further described in **Exhibit A-2**, the "Alcona Project"), (b) the hydroelectric project known as the Calkins Bridge Hydroelectric Project, located on the Kalamazoo River in Allegan County, Michigan (as further described in **Exhibit A-2**, the "Calkins Bridge Project"), (c) the hydroelectric project known as the Cooke Dam Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan (as further described in **Exhibit A-2**, the "Cooke Project"), (d) the hydroelectric project known as the Croton Hydroelectric Project, located on the Muskegon River near Croton Township, Michigan (as further described in **Exhibit A-2**, the "Croton Project"), (e) the hydroelectric project known as the Five Channels Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan (as further described in **Exhibit A-2**, the "Five Channels Project"), (f) the hydroelectric project known as the Foote Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan (as further described in **Exhibit A-2**, the "Foote Project"), (g) the hydroelectric project known as the Hardy Hydroelectric Project, located on the Muskegon River near Oxbow, Michigan (as further described in **Exhibit A-2**, the "Hardy Project"), (h) the Hodenpyl Hydroelectric Project, located on the Manistee River near Cadillac, Michigan (as further described in **Exhibit A-2**, the "Hodenpyl Project"), (i) the hydroelectric project known as a the Loud Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan (as further described in **Exhibit A-2**, the "Loud Project"), (j) the hydroelectric project known as the Mio Hydroelectric Project, located on the Au Sable River in Oscoda County, Michigan (as further described in **Exhibit A-2**, the "Mio Project"), (k) the hydroelectric project known as the Rogers Hydroelectric Project, located on the Muskegon River near Big Rapids, Michigan (as further described in **Exhibit A-2**, the "Rogers Project"), (l) the hydroelectric project known as the Tippy Hydroelectric Project, located on the Manistee River near Manistee, Michigan (as further described in **Exhibit A-2**, the "Tippy Project") and (m) the hydroelectric project known as the Webber Hydroelectric Project, located on the Grand River near Ionia, Michigan (as further described in **Exhibit A-2**, the "Webber Project") (the projects described in clauses (a) through (m) of this recital, each individually, a "Project" and, collectively, the "Projects").

2. Purchaser desires to purchase and assume from Seller, and Seller desires to sell and assign to Purchaser, subject to the terms and conditions contained in this Agreement, the Project Assets and the Assumed Liabilities (as such terms are defined below).

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

ARTICLE 1

DEFINITIONS

Section 1.1. Definitions. For purposes of this Agreement, capitalized terms not otherwise defined herein have the meanings set forth below:

"Accounting Firm" shall mean a nationally recognized independent accounting firm mutually acceptable to Purchaser and Seller.

"Accrued Vacation Time Liabilities" shall have the meaning set forth in **Section 7.6(f)**.

"Acquisition Proposal" shall mean any inquiry, proposal or offer from any Person (other than Purchaser or any of its Affiliates) concerning (a) a merger, consolidation, liquidation, recapitalization, share exchange or other business combination transaction that is limited solely to the Projects and/or the Project Assets; or (b) the sale, lease, exchange or other disposition of any material portion of the properties or assets of the Projects and/or the Project Assets.

"Action" shall mean any action, claim, complaint, charge, suit, investigation, petition, arbitral proceeding or other legal proceeding, whether civil, criminal or administrative, in Law or in equity.

"Active Employees" shall have the meaning set forth in **Section 7.6(a)**.

"Affiliates" shall mean when used with respect to any specified Person, any other Person who or that, directly or indirectly through one or more intermediaries, Controls, is Controlled by, or is under common Control with such specified Person.

"Agreed Allocation" shall have the meaning set forth in **Section 2.3(c)**.

"Agreed Amount" shall have the meaning set forth in **Section 9.5**.

"Agreement" shall mean this Purchase and Sale Agreement, including all Exhibits and Schedules attached hereto, as the same may be amended, modified, or supplemented from time to time in writing by Seller and Purchaser or otherwise in accordance with this Agreement.

"Alcona Project" shall have the meaning set forth in the Recitals.

"Allocation Methodology" shall have the meaning set forth in **Section 2.3(b)**.

"Allocation Review Period" shall have the meaning set forth in **Section 2.3(b)**.

"Allocation Schedule" shall have the meaning set forth in **Section 2.3(b)**.

"Ancillary Agreements" shall mean the Power Purchase Agreement, the Environmental Indemnity Agreement, the Memorandum of Environmental Indemnity Agreement, the Regulatory Disallowance Agreement, the Interconnection Agreements, the Transition Services Agreement, the Equity Commitment Letter and any other agreement executed and delivered by the Parties or their Affiliates pursuant to this Agreement.

"Anti-Money Laundering and Anti-Terrorism Laws" shall mean the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Action of 2001, Public Law 107-56, Executive Order No. 13224, any Laws relating to terrorism or money laundering.

"Assignment and Assumption Agreement for Real Property Agreements" shall mean the assignment and assumption agreement in the form attached hereto as **Exhibit H** incorporated by reference herein.

"Assumed Environmental Liabilities" shall mean all Environmental Liabilities (other than Excluded Environmental Liabilities) of every kind, nature, character and description relating to, arising

from or associated with the Projects, the Project Assets or the Calkins Bridge Project Easement Reservation Real Property, regardless of whether any such Liability arose or was incurred prior to, on or after the Closing.

"Assumed Liabilities" shall have the meaning set forth in **Section 2.1(c)**.

"Automatic Objections" shall have the meaning set forth in **Section 3.1(e)**.

"Bill of Sale and General Assignment" shall mean a bill of sale and general assignment in the form attached hereto as **Exhibit F** incorporated by reference herein.

"Books and Records" shall mean original and electronic copies of material documents, papers, books, records, certificates, spreadsheets, files and records, in each case, in the possession or control of Seller and related specifically to the ownership, use and operation of the Projects, the Project Assets or the Transferred Employees during the Lookback Period, including any and all documentation and communications related to any completed, in-process or planned construction projects in respect of the Projects or the Project Assets, all of which Seller has used good faith efforts to identify for the benefit of the Parties.

"Business Day" shall mean any Day of the week other than (a) Saturday and Sunday, (b) a Day on which banking institutions in the State of Michigan are obligated or authorized by law or executive action to be closed for the transaction of normal banking business, or (c) a Day on which governmental functions in Jackson, Michigan are interrupted because of extraordinary events such as natural disasters, power outages or acts of terrorism.

"Business Employee" shall mean each of the Active Employees and Inactive Employees.

"Calkins Bridge Project" shall have the meaning set forth in the Recitals.

"Calkins Bridge Project Easement Reservation" shall mean the easements and other rights reserved in that certain Quitclaim Deed, dated February 12, 1982, by and between Consumers Power Company (now known as Consumers Energy Company) and the State of Michigan, Department of Natural Resources.

"Calkins Bridge Project Easement Reservation Real Property" shall mean the real property subject to the Calkins Bridge Project Easement Reservation.

"Casualty" shall mean any damage or destruction that, pursuant to Prudent Utility Practice or consistent with past practice, requires repair or replacement to any material part of the Project Assets for a single Project after the Effective Date and prior to the Closing Date.

"Casualty Loss" shall have the meaning set forth in **Section 4.3(a)**.

"Casualty Notice" shall have the meaning set forth in **Section 4.3(a)**.

"Casualty/Condemnation Cap" shall have the meaning set forth in **Section 4.5(b)**.

"Casualty/Condemnation Threshold" shall have the meaning set forth in **Section 4.5(a)**.

"Claim" shall have the meaning set forth in **Section 9.4**.

"Claim Notice" shall have the meaning set forth in **Section 9.4**.

"Claimed Amount" shall have the meaning set forth in **Section 9.4**.

"Closing" shall mean the consummation of the purchase and sale of the Project Assets pursuant to the terms of this Agreement.

"Closing Date" shall mean the date that is ten (10) Business Days after the date that the conditions to the Closing set forth in **Section 4.1** and **Section 4.2** have been satisfied or waived by the applicable Party (other than those conditions that by their nature will be satisfied at the Closing), or at such other time or date as Purchaser and Seller mutually agree in writing, but in no event later than one (1) year after the date on which Seller has submitted all initial application(s) for the Required Regulatory Approvals (the "Outside Closing Date"); *provided*, that beginning on the one (1) year anniversary of such date, the Outside Closing Date shall extend day-for-day for each Day thereafter that any of the Required Regulatory Approvals have not been obtained; *provided further*, such extension shall be no longer than the two (2) year anniversary of such date.

"Closing Payment" shall have the meaning set forth in **Section 2.2(c)**.

"COBRA" shall mean the Consolidated Omnibus Budget Reconciliation Act of 1985, 29 U.S.C. § 1161-1168 and 42 U.S.C. §§ 300bb-1-300bb-8, as amended.

"Code" shall mean the Internal Revenue Code of 1986, and all amendments thereto.

"Collective Bargaining Agreement" shall mean, collectively, (a) that certain Working Agreement effective as of October 1, 2020, by and between Seller and Union, (b) that certain Memorandum of Agreement effective as of April 1, 2025, and (c) all addenda and letters of understanding thereto.

"Communications Act" shall mean the Communications Act of 1934, as amended.

"Communications Laws" shall mean the Communications Act and the rules, regulations and published orders of the FCC, as amended and including any court rulings issued upon review of such rules, regulations and orders, and any Laws of any other Governmental Authority regulating or overseeing communications facilities or communications services.

"Condemnation" shall mean any taking by eminent domain of any material part of the FERC Licensed Property after the Effective Date and prior to the Closing Date.

"Condemnation Award Credit" shall have the meaning set forth in **Section 4.6(a)**.

"Condemnation Loss" shall have the meaning set forth **Section 4.4(a).**

"Condemnation Notice" shall have the meaning set forth in **Section 4.4(a)**.

"Confidential Information" shall mean all documents, studies, reports, test results, brochures, offering materials, photographs, leases, lease guarantees, rent rolls, lease schedules, surveys, title reports and commitments, legal documents, financial information, computer output and other materials and information relating to the Project Assets, and all analyses, compilations, forecasts, projections and other documents prepared based upon such materials and information, any and all proposals made in connection with a potential sale of the Project Assets (including all information contained within the Data Room), and any proposals made to Seller involving a price for the Project Assets, whether the same are in electronic, pictorial, written or other form. The term "Confidential Information" shall also include this Agreement and the Ancillary Agreements, the terms hereof and thereof and any information contained herein or therein.

The term Confidential Information shall not include information that is generally available to the public, other than any portion of the Confidential Information that becomes available to the public as a result of previous disclosure by Purchaser, its employees, officers, directors, attorneys, Affiliates, accountant, lender, investors, client and agents in violation of this Agreement.

"Confidentiality Agreement" shall mean that certain Agreement of Mutual Confidentiality, dated as of February 7, 2024, by and between Seller and Hull Street Energy, LLC.

"Consumers Interconnection Agreement" shall mean, with respect to the Alcona Project, the Calkins Bridge Project, the Cooke Project, the Croton Project, the Five Channels Project, the Foote Project, the Hodenpyl Project, the Loud Project, the Rogers Project and the Webber Project, the interconnection agreement substantially in the form attached hereto as **Exhibit S** incorporated by reference herein between Purchaser (or the applicable Subsidiary) and Consumers Energy Company, in its capacity as distribution provider, regarding the terms and conditions by which such Project may be interconnected to Consumers Energy Company's distribution system.

"Consumers Umbrella GIA" shall mean that certain Amended and Restated Generator Interconnection Agreement, effective as of February 1, 2024, by and among Seller, METC, and MISO.

"Contested Amount" shall have the meaning set forth in **Section 9.5**.

"Contract" shall mean any legally binding contract, assignment, obligation, understanding, commitment, lease, license, purchase order, bid or other agreement, together with all amendments and other modifications thereto.

"Control" shall mean, as to any Person, the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise. The term "Controlled" shall have a correlative meaning.

"Cooke Project" shall have the meaning set forth in the Recitals.

"CPNode" shall have the meaning set forth in the MISO Rules.

"Croton Project" shall have the meaning set forth in the Recitals.

"Data Room" shall mean that data room established by or on behalf of Seller access to which was provided to Purchaser and/or Purchaser's Affiliates, located at https://consumersenergy.sharepoint.com.mcas.ms/sites/ConsumersEnergyHydroDataRoom.

"Day" shall mean calendar days unless otherwise specified in this Agreement.

"Deeds" shall mean, with respect to each Project, (a) the quitclaim deed conveying the applicable Fee Simple Real Property to Purchaser substantially in the form attached hereto as **Exhibit E-1** incorporated by reference herein, which will contain the legal description contained in Seller's vesting deeds by which it acquired title, and (b) if Purchaser acquires the applicable Survey, the quitclaim deed conveying the applicable Fee Simple Real Property to Purchaser substantially in the form attached hereto as **Exhibit E-1** incorporated by reference herein, which will contain the legal description shown on the applicable Survey for the applicable Fee Simple Real Property described in the aforementioned quitclaim deed, and in each case (i) shall reserve the Reserved Easements, exclude the METC Easements, and be subject to the Permitted Exceptions and (ii) may be updated by mutual agreement of the Parties following the Effective Date pursuant to **Section 3.1(f)** and **Section 3.1(g)**.

"Designated Purchaser Representatives" shall mean Sarah Wright, Scott Hofmeister, and Jack McGrath.

"Designated Seller Representatives" shall mean Sri Maddipati, George McKenzie, Ben Rainwater, and Richard Blumenstock.

"Disclosure Loss" shall have the meaning set forth in **Section 7.16(e)**.

"Disclosure Schedule" shall mean the disclosure schedules attached to this Agreement.

"Disclosure Schedule Update" shall have the meaning set forth in **Section 7.16(a)**.

"Dispute" shall have the meaning set forth in **Section 12.1**.

"Dollars" and the sign "$" shall mean the lawful currency of the United States of America.

"Effective Date" shall have the meaning set forth in the Preamble.

"EGLE Joint Funding Agreement" and "EGLE Joint Funding Agreements" shall have the meanings set forth in **Section 7.12(o)**.

"EGLE Funding Obligations" shall have the meaning set forth in **Section 8.4(h)**.

"EGLE Funding Period" shall have the meaning set forth in **Section 8.4(h)(A)**.

"Employee Benefit Plan" shall have the meaning set forth in **Section 5.17(a)**.

"Employment Laws" shall mean any and all federal and state laws; local statues and ordinances that are related to or pertain to employment or employment practices, wrongful discharge, or breach of express or implied Contract; and further including the following statutes: Title VII of the Civil Rights Act, 42 U.S.C. §§ 2000e-2000e17 (as amended); the Family and Medical Leave Act, 29 U.S.C. § 2601 *et seq.*; the Age Discrimination in Employment Act, 29 U.S.C., § 621 *et seq.*; the Older Workers Benefit Protection Act, 104 Stat. § 978 *et seq*.; the Americans with Disabilities Act, 42 U.S.C. §§ 12101 *et seq*.; the National Labor Relations Act, 29 U.S.C. § 151-169; WARN Act; the Rehabilitation Act, 29 U.S.C. § 701 *et seq*.; the Michigan Earned Sick Time Act; MCL § 408.963 *et seq*.; the Bullard-Plawecki Employee Right to Know Act, MCL § 423.501 *et seq*.; the Worker's Disability Compensation Act, MCL § 418.30S1 *et seq*.; the Fair Labor Standards Act, 29 U.S.C. § 201; the Health Insurance Portability and Accountability Act, 42 U.S.C. § 1320d *et seq.*; and the Michigan Personal Data Privacy Act, MCL § 445.63 *et seq*.; ERISA; and COBRA.

"Endorsements" shall have the meaning set forth in **Section 3.1(d)**.

"Environment" or "Environmental" shall mean ambient air, soil, surface waters and wetlands (including navigable and non-navigable waters), groundwater, drinking water supply, stream sediments, land surface or subsurface strata, plant and animal life, and any other environmental medium or natural resource.

"Environmental Indemnity Agreement" shall mean the Environmental Indemnity Agreement among the Parties and the Subsidiaries in the form attached hereto as **Exhibit M-1** incorporated by reference herein, to be dated as of the Closing Date and delivered by the Parties at the Closing.

"Environmental Laws" shall mean any local, state and federal Law, regulation, rule, ordinance, code, or binding order or decree relating to the Environment and Environmental conditions, including the

Resource Conservation and Recovery Act of 1976, 42 U.S.C. §§ 6901 *et seq*., the Comprehensive Environmental Response Compensation and Liability Act of 1980, 42 U.S.C. §§ 9601-9657, as amended by the Superfund Amendments and Reauthorization Act of 1986, the Hazardous Materials Transportation Act, 49 U.S.C. §§ 6901 *et seq*., the Federal Water Pollution Control Act, 33 U.S.C. §§ 1251 *et seq*., the Clean Air Act, 42 U.S.C. §§ 741 *et seq*., the Clean Water Act, 33 U.S.C. §§ 7401 *et seq*., the Toxic Substances Control Act, 15 U.S.C. §§ 2601-2629, the Safe Drinking Water Act, 42 U.S.C. §§ 300f-300j, the Endangered Species Act, 16 U.S.C. §§ 1531-1544, the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. §136, *et seq*., the provisions of the Occupational Safety and Health Act of 1970, 29 U.S.C. §651, *et seq*., relating to the handling of and exposure to Hazardous Materials and similar substances, each as amended, and any regulations promulgated thereunder, guidance and directives issued with respect thereto, or policies adopted by the applicable authorities thereunder, and the Michigan Natural Resources and Environmental Protection Act ("NREPA"), Act 451 of 1994, MCL 324.101, *et seq*., as amended, including but not limited to, Part 31 Water Resources Protection, Part 55 Air Pollution Control, Part 111 Hazardous Waste Management, Part 115 Solid Waste Management, and Part 201 Environmental Remediation, and any State of Michigan regulations promulgated thereunder, guidance and directives issued with respect thereto or policies adopted by the State of Michigan thereunder. For the avoidance of doubt, the Federal Power Act, 16 U.S.C. § 791a, shall not be considered an Environmental Law.

"Environmental Liabilities" shall mean any Liabilities that are (a) related to any Environmental, health or safety issues, (b) based upon or related to any provision of applicable Environmental Law or the presence or alleged presence of Hazardous Materials, or (c) any third-party claim for damages arising from pollution or contamination or under or in respect of Environmental Laws.

"Environmental Permit" shall mean any Permit required or issued under any Environmental Law.

"Equity Commitment Letter" shall mean that certain executed commitment letter from Hull Street Energy Partners III, L.P. and its Affiliates, dated as of the Effective Date and attached hereto as **Exhibit X**.

"ERISA" shall mean the Employee Retirement Income Security Act, 29 U.S.C. § 1001 *et seq*.

"ERISA Affiliate" shall mean any employer (whether or not incorporated) that would be treated together with Seller as a "single employer" within the meaning of Section 414 of the Code or Section 4001 of ERISA.

"Escrow Agent" shall mean Stewart Title Company.

"Escrow Agreement" shall have the meaning set forth in **Section 8.1**.

"Excluded Assets" shall mean the items listed in **Section 2.1(b)**.

"Excluded Contracts" shall mean those Contracts listed on **Schedule 2.1(b)**.

"Excluded Environmental Liabilities" shall have the meaning set forth in **Section 2.1(d)(vi)**.

"Excluded Liabilities" shall have the meaning set forth in **Section 2.1(d)**.

"Excluded Permits" shall mean (a) all Permits necessary under or otherwise required by applicable Law for the operation, maintenance, repair, ownership and use of the Projects and Project Assets that cannot be transferred to Purchaser or its Subsidiary, as applicable, in accordance with applicable Law and (b) Project Permits that have expired in accordance with their terms and are no longer necessary under or otherwise required by applicable Law for the operation, maintenance, repair, ownership and use of the Projects and Project Assets.

"Excluded Shoreline Licenses" shall mean those agreements regarding usage and access to shorelines listed in **Exhibit D** which are marked with an asterisk.

"Executive Order No. 13224" shall mean Executive Order No. 13224 (Blocking Property and Prohibiting Transactions with Persons Who Commit, Threaten to Commit, or Support Terrorism).

"Existing Support Obligations" shall have the meaning set forth in **Section 7.18**.

"FCC" shall mean the Federal Communications Commission or any successor.

"FCC Approval" shall mean one or more final, non-appealable Orders issued by the FCC under the Communications Laws, that consents to or otherwise approves the transfer of each of the FCC Licenses in their entirety from Seller to Purchaser and otherwise in form and substance reasonably satisfactory to each of the Parties.

"FCC Licenses" shall mean, collectively, the licenses issued by the FCC that are used or useful in the operation of the Projects, listed on **Schedule 1.1(c)**.

"Federal Power Act" shall mean the Federal Power Act, as amended, and the rules and regulations promulgated thereunder.

"Fee Simple Real Property" shall mean all of Seller's right, title, and interest in the land generally described and/or depicted on **Exhibit A-1** attached hereto.

"FERC" shall mean the Federal Energy Regulatory Commission or any successor.

"FERC 203 Approval" shall mean final Order or Orders, issued by FERC under Section 203 of the Federal Power Act, approving the transactions contemplated by this Agreement that (a) does not contain any conditions or restrictions imposed on, or modifications required of, Seller that Seller reasonably determines adversely affects its decision to sell the Project Assets pursuant to this Agreement and (b) does not contain any conditions or restrictions imposed on, or modifications required of, Purchaser that Purchaser reasonably determines adversely affects (i) its decision to purchase the Project Assets pursuant to this Agreement or (ii) its ownership of the Project Assets following the Closing.

"FERC Approvals" shall mean the FERC License Transfer Approvals, the FERC License Amendment Approvals and the FERC 203 Approval.

"FERC License Amendment Approvals" shall mean one or more final, non-appealable Orders issued by the FERC under Section 6 of the Federal Power Act and the applicable regulations thereunder, that approves an amendment of any FERC License (a) to remove any Excluded Assets from the FERC Licensed Property associated with such FERC License and (b) to recognize Seller's right to use any Reserved Easements and Temporary Substation Easements located within the FERC Licensed Property associated with such FERC License, and otherwise in form and substance satisfactory to each of the Parties in its reasonable discretion.

"FERC License Transfer Approvals" shall mean one or more final, non-appealable Orders issued by the FERC under Section 8 of the Federal Power Act and the applicable regulations thereunder, that approves the transfer of each of the FERC Licenses in their entirety from Seller to Purchaser and otherwise in form and substance satisfactory to each of the Parties in its reasonable discretion.

"FERC Licensed Property" shall mean, with respect to each FERC License, the Land, including the Flowage Easements, within the FERC-approved project boundary for such FERC License, but excluding any Excluded Assets from the applicable FERC Licensed Property pursuant to the FERC License Amendment Approvals.

"FERC Licenses" shall mean, collectively, the licenses issued by FERC with respect to the Projects, listed on **Schedule 1.1(a)**.

"Five Channels Project" shall have the meaning set forth in the Recitals.

"Flowage Easements" shall mean, solely with respect to the Projects, all flowage easements, including those described in attached **Exhibit U** incorporated herein by reference, which may be updated by mutual agreement of the Parties following the Effective Date, as necessary, which generally permit Seller to flood properties in connection with Seller's operation of the Projects, including easements in gross and appurtenant to the Land.

"Foote Project" shall have the meaning set forth in the Recitals.

"Fraud" shall mean, with respect to a Party, actual and intentional fraud committed by such Party in respect of any representation or warranty contained in this Agreement which shall require: (a) a false representation of fact by such Party in this Agreement (including any "bringdown" or other confirmation with respect to any such representation or warranty); (b) such Party had actual knowledge that such representation or warranty was false when made and acted with scienter; (c) the false representation or warranty caused the other Party to whom it was made, in justifiable reliance upon such false representation or warranty and with ignorance as to the falsity of such representation or warranty, to take or refrain from taking action; and (d) the other Party to whom the false representation was made suffered Loss by reason of such reliance. "Fraud" expressly excludes legal theories such as constructive fraud, equitable fraud, promissory fraud, unfair dealings fraud, negligent or reckless misrepresentation, and other fraud-based claims based on similar legal theories.

"GAAP" shall mean generally accepted accounting principles in the United States of America, as amended from time to time, applied consistently.

"Government List" shall mean any of (a) the lists maintained by the United States Department of Commerce (Denied Persons and Entities), (b) the list maintained by the United States Department of Treasury (Specially Designated Nationals and Blocked Persons), (c) the lists maintained by the United States Department of State (Terrorist Organizations and Debarred Parties), and (d) the lists of designated persons maintained by the United Nations Security Council, the European Union or any European Union Member State.

"Governmental Approvals" shall mean the FERC Approvals, the MPSC Approval, the FCC Approval, requests for new Property Tax identification numbers for the Reserved Easements and the approvals of all other Governmental Authorities having regulatory authority over the Parties, the Projects, the Project Assets, or the transactions contemplated by this Agreement or the Ancillary Agreements.

"Governmental Authority" shall mean any federal, state, or local authority, agency, court, tribunal, department, board, council, commission or other body or political subdivision thereof, including any municipality, township and county, and any entity exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to government, including any corporation or other entity owned or controlled by any of the foregoing.

"Hardy EPC Agreement" shall mean that certain Contract for Hardy Dam Rehabilitation, dated as of January 3, 2025, by and between Seller and Kokosing Industrial, Inc.

"Hardy Interconnection Agreement" shall mean, with respect to the Hardy Project, that certain Large Generator Interconnection Agreement, effective as of July 25, 2008, by and among Seller, METC, and MISO.

"Hardy Project" shall have the meaning set forth in the Recitals.

"Hazardous Materials" shall mean any substance which is or contains: (a) any "hazardous substance" as now or hereafter defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 U.S.C. § 9601 *et seq*.), Part 201 of NREPA, or any regulations promulgated thereunder; (b) any "hazardous waste" as now or hereafter defined in the Resource Conservation and Recovery Act (42 U.S.C. § 6901 *et seq*.), Part 111 of NREPA, or regulations promulgated thereunder; (c) any substance regulated by the Toxic Substances Control Act (15 U.S.C. § 2601 *et seq*.); (d) gasoline, diesel fuel or other petroleum hydrocarbons; (e) asbestos and asbestos containing materials, in any form, whether friable or nonfriable; (f) polychlorinated biphenyls; (g) radon gas; (h) mold, mildew, fungus or other potentially dangerous organisms; (i) putrescible or non-putrescible solid, semisolid, liquid or gaseous waste of any type; (j) any perfluoroalkyl, polyfluoroalkyl or other similar substances; and (k) any additional substances or materials, including coal or coal ash residuals or coal combustion residues, which are now or hereafter classified or considered to be hazardous or toxic or which are regulated or limited under any applicable Laws now or hereafter enacted, promulgated, or amended, of the United States, the states, the counties, the cities or any other political subdivisions in which the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property is located and any other political subdivision, agency or instrumentality exercising jurisdiction over the owner of the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property or the use of the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property relating to pollution, the protection or regulation of human health, natural resources or the Environment, or the emission, discharge, Release or threatened Release of pollutants, contaminants, chemicals or industrial, toxic or hazardous substances or waste into the Environment (including ambient air, surface water, ground water, land, soil, or sediment), including all applicable rules and regulations of all Governmental Authorities.

"Hodenpyl Project" shall have the meaning set forth in the Recitals.

"HSR Act" shall mean the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

"HSR Approval" shall mean the filings of the Parties pursuant to the HSR Act shall have been made and the applicable waiting period and any extensions thereof shall have expired or been terminated.

"Inactive Employees" shall have the meaning set forth in **Section 7.6(a)**.

"Income Tax" shall mean any federal, state, local or foreign Tax measured or imposed on income or earnings, capital or net worth (and any franchise Tax or other Tax in connection with doing business imposed in lieu thereof), including any interest, penalty or addition thereto, whether disputed or not; *provided*, *however*, the term "Income Tax" shall not include any sales or use Tax.

"Indemnified Party" shall have the meaning set forth in **Section 9.4**.

"Indemnifying Party" shall have the meaning set forth in **Section 9.4**.

"Inspection Period" shall mean the period commencing on the Effective Date and ending one hundred twenty (120) Days later.

"Inspections" shall have the meaning set forth in **Section 7.5(a)**.

"Insurance Policies" shall have the meaning set forth in **Section 5.15**.

"Intended Tax Treatment" shall have the meaning set forth in **Section 2.3(a)**.

"Interconnection Agreements" shall mean, with respect to each Project, a Consumers Interconnection Agreement, a METC Interconnection Agreement or the Hardy Interconnection Agreement, as applicable.

"Interim Period" shall mean the period of time from the Effective Date until the earlier of (a) the Closing Date or (b) the date that any valid termination of this Agreement becomes effective.

"Internal Mapping" shall mean the documents attached as **Exhibit V** (as may be updated by mutual agreement of the Parties following the Effective Date, as necessary).

"Land" shall mean the Fee Simple Real Property, together with (a) all improvements, buildings, structures, and fixtures, located thereon which are Project Assets, (b) all privileges, rights, riparian rights and obligations, and bottom lands, easements, the Real Property Agreements, and appurtenances belonging to such land which are Project Assets and (c) all right, title and interest (if any) of Seller in and to any streets, alleys, passages or other rights-of-way or appurtenances included in, adjacent to or used in connection with such land. Upon receipt of a Title Commitment which includes a metes and bounds vesting deed legal description of the Fee Simple Real Property or if Purchaser obtains a metes and bounds legal description (including in connection with an applicable Survey) of the Fee Simple Real Property, then **Exhibit A-1** may be updated by mutual agreement of the Parties following the Effective Date, as necessary, to reflect such metes and bounds legal description in addition to the applicable description and/or depiction set forth in **Exhibit A-1**.

"Law" or "Laws" shall mean any federal, state, local or other law, common law, constitution, treaty, code, rule, ordinance, binding directive, regulation, Order, certificate, authorization, or approval of a Governmental Authority that is binding on a Party or any of its property.

"Lease Year" shall have the meaning set forth in **Section 8.4(g)**.

"Leases" shall mean (a) those leases related solely to the Projects and Project Assets described on the attached **Exhibit G** incorporated herein by reference, (b) the Flowage Easements, (c) the Calkins Bridge Project Easement Reservation, and (d) the Shoreline Licenses (other than Excluded Shoreline Licenses).

"Liability" shall mean any liability or obligation, whether known or unknown, whether asserted or unasserted, whether absolute or contingent, whether accrued or unaccrued, whether liquidated or unliquidated, and whether due or to become due.

"Liability Cap" shall have the meaning set forth in **Section 10.1**.

"Lien" shall mean any mortgage, deed of trust, lien, pledge, charge, security interest, assessment, or hypothecation, or any unrecorded encumbrance, reservation, encroachments, restrictive covenant, easement or encumbrance of any kind, whether arising by Contract or under any applicable Law.

"Lien Date" shall have the meaning set forth in **Section 8.4(b)(i)(A)**.

"Lookback Period" shall mean a five (5) year period commencing five (5) years prior to the Effective Date and ending on the Effective Date.

"Losses" shall mean any and all claims, damages, penalties, awards, settlement payments, losses, liabilities, costs, deficiencies and expenses (including reasonable investigative costs, court costs and any reasonable outside legal, accounting or expert expenses).

"Loud Project" shall have the meaning set forth in the Recitals.

"Made Available" shall mean, collectively, (i) the materials that were delivered or made available to Purchaser or its representatives in the Data Room at least five (5) Business Days prior to the Effective Date and (ii) the materials listed on **Schedule 1.1(d)** that were delivered or made available to Purchaser or its representatives in the Data Room prior to the Effective Date.

"Material Adverse Effect" shall mean any change or event that, individually or in the aggregate, (a) with respect to Seller or Purchaser, as the case may be, has or would reasonably be expected to have a material adverse effect on the ability of Seller or Purchaser, as the case may be, to consummate the transactions contemplated by this Agreement, and (b) with respect to the Projects or the Project Assets, has or would reasonably be expected to have a material adverse effect on the assets, liabilities, condition (financial or otherwise) of or ability to own, use, operate, maintain or generate electricity from, in each case, the Projects, taken as a whole. Notwithstanding the foregoing, none of the following changes or events shall be taken into account or form the basis of determining whether there has been or would reasonably be expected to have been a Material Adverse Effect: (i) any change or event generally affecting the international, national or regional electric generating, transmission or distribution industry, including any change in international, national or regional wholesale or retail markets for electric power or energy or for transmission or distribution; (ii) any change or event generally affecting international, national or regional political, market, economic or business conditions; (iii) any change or event generally affecting the hydroelectric power generation industry; (iv) any change in financial, banking, securities or currency markets, including the inability to finance the transactions contemplated by this Agreement or any increased costs for financing or suspension of trading in, or limitation on process for, securities on any domestic or international securities exchange; (v) any failure of the Projects or Project Assets to meet projections or forecasts or revenue or earnings predictions for any period; (vi) the execution, delivery and performance by the Parties of this Agreement and the Ancillary Agreements or the pendency or public disclosure of this Agreement or the Ancillary Agreements or the transactions contemplated hereby or thereby; (vii) any change in general regulatory or political conditions, including any engagements of hostilities, acts of war or terrorist activities or changes imposed by a Governmental Authority associated with additional security; (viii) any change in markets for commodities, equipment or supplies used or to be used in connection with the Projects; (ix) any effect of weather, climate or atmospheric condition or other acts of God; (x) any change in Laws (including Environmental Laws), GAAP (or the enforcement or interpretation thereof), regulatory accounting principles or industry standards; (xi) any change in market design, pricing or rules applicable to the Projects, including any change in regional transmission authority rules, procedures, guidelines or requirements (including MISO); (xii) any change or event that is cured or corrected by Seller prior to the Closing; (xiii) any change in the financial condition or results of operation of Purchaser or its Affiliates, including its ability to access capital and equity markets and changes due to a change in the credit rating of Purchaser or its Affiliates; and (xiv) global health conditions (including any epidemic, pandemic, or disease outbreak (including the Covid-19 virus), but only to the extent of any material worsening of such conditions threatened or existing as of the Effective Date); *provided*, that the exceptions contained in **clauses (i)** through **(xiv)** will not apply to the extent that such change or event is disproportionately adverse

with respect to a Project or the Project Assets (taken as a whole), as compared to other hydroelectric power generation projects in the United States.

"Material Contracts" shall mean the following Contracts to which Seller is a party which are solely related to the Projects and any Project Asset and which are in effect: (a) each Contract for the purchase, sale or delivery of energy, capacity or ancillary services from any Project; (b) each Contract for the transmission of electricity to or from any Project; (c) each Contract establishing any joint venture, strategic alliance or other similar collaboration that is material to the Projects, taken as a whole; (d) each Contract that involves expenditures, receipts or payments of more than One Million Dollars ($1,000,000); (e) the Leases; and (f) each Contract with any Governmental Authority, other than, for the avoidance of doubt, Permits; *provided*, Material Contracts shall not include any Excluded Contract.

"Material Environmental Permits" shall have the meaning set forth in **Section 5.13(c)**.

"Material Permits" shall have the meaning set forth in **Section 5.14(a)**.

"Memorandum of Environmental Indemnity Agreement" shall mean the Memorandum of Environmental Indemnity Agreement among the Parties and the Subsidiaries, substantially in the form attached hereto as **Exhibit M-2** incorporated by reference herein, to be dated as of the Closing Date and delivered by the Parties at Closing.

"Memorandum of Understanding" shall mean a memorandum of understanding regarding the assumption and adoption of the Collective Bargaining Agreement, substantially in the form attached hereto as **Exhibit W-1** incorporated by reference herein.

"METC" shall mean Michigan Electric Transmission Company.

"METC Easements" shall mean those easements described on the attached **Exhibit Q** incorporated herein by reference.

"METC Interconnection Agreements" shall mean, with respect to the Mio Project and the Tippy Project, an interconnection agreement among MISO, METC and Purchaser (or the applicable Subsidiary) which describes the terms and conditions regarding the electric connection of such Project to the METC transmission system.

"Mio Project" shall have the meaning set forth in the Recitals.

"MISO" shall mean Midcontinent Independent System Operator, Inc. or any successor.

"MISO Rules" shall mean the Open Access Transmission, Energy and Operating Reserve Markets Tariff, including all schedules or attachments thereto, of MISO, as amended from time to time, including any successor tariff or rate schedule approved by the FERC, together with any applicable MISO Business Practice Manual as amended from time to time.

"MPSC" shall mean the Michigan Public Service Commission or any successor.

"MPSC Approval" shall mean the final Order, no longer subject to appeal, issued by the MPSC: (a) approving the transactions contemplated by this Agreement, including the Power Purchase Agreement, on terms and conditions mutually acceptable to each of the Parties, in each Party's respective reasonable discretion, including terms and conditions related to cost recovery and (b) which does not contain terms,

conditions or modifications unacceptable to each of the Parties in each Party's respective reasonable discretion.

"Multiemployer Plan" shall mean any employer (whether or not incorporated) that would be treated together with Seller as a "single employer" within the meaning of Section 414 of the Code or Section 4001 of ERISA.

"NLRA" shall mean the National Labor Relations Act, 29 U.S.C. §§ 151-169.

"Non-Union Employees" shall mean the non-union employees of Seller listed on **Part I** of **Schedule 5.16(a)**.

"Notice to Terminate" shall have the meaning set forth in **Section 7.5(a)**.

"Order" shall mean any binding order, writ, judgment, injunction, decree (including any consent decree), settlement, stipulation, determination, award or similar direction or agreement of or with any Governmental Authority.

"Outside Closing Date" shall have the meaning set forth in the definition of Closing Date.

"Outstanding Support Obligations" shall have the meaning set forth in **Section 7.18**.

"Party" and "Parties" shall have the meanings set forth in the Preamble.

"Permits" shall mean all permits, licenses, approvals, directives, consents, orders, registrations, privileges, franchises, memberships, certificates, entitlements and other authorizations issued by Governmental Authorities, including any environmental, health and safety permits, use permits, zoning approvals, site plan approval, building permits, certificates of occupancy, and all amendments, modifications, supplements, general conditions and addenda thereto, but excluding the FERC Licenses and the FCC Licenses.

"Permitted Disclosure Schedule Update" shall have the meaning set forth in **Section 7.16(e)**.

"Permitted Exceptions" shall mean: (a) applicable zoning, subdivision, building and other land use Laws; (b) all matters, whether or not of record, that arise out of the actions of Purchaser or its Affiliates, agents, representatives or contractors, unless such matters arise out of actions of Purchaser or its Affiliates, agents, representatives or contractors which are expressly contemplated by this Agreement or consented to by Seller; (c) any Lien of real estate Taxes and assessments not yet due and payable, subject to adjustment as provided herein; (d) all matters that the Title Company commits to insuring over; (e) any installation, service, connection, usage or maintenance charge for sewer, water, electricity, telephone, cable or internet service, and any charges due under any reciprocal easement agreement, declarations of covenants, conditions, restrictions, common area agreement, shared maintenance agreement, or similar agreements which burden or benefit any Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property, in each case subject to adjustment as provided herein; (f) all matters shown on or referenced in the Title Commitment or the Survey, for each Project, as applicable, and in each case to which Purchaser has not objected as of the Title Objection Date; (g) all matters deemed Permitted Exceptions pursuant to **Section 3.1(c)(ii)** or **Section 3.1(c)(iv)**; (h) solely in the case that Purchaser elects not to order a Survey, or fails to order a Survey by the Survey Order Date, for a Project, all matters as would be disclosed by a survey that meets the requirements of **Section 3.1(b)** of the applicable Fee Simple Real Property or, if applicable, the Calkins Bridge Project Easement Reservation Real Property and/or a physical inspection of the applicable Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property

and to which Purchaser has not objected as of the applicable Title Objection Date; (i) the Leases; (j) the Reserved Easements identified on the Internal Mapping as of the Effective Date and the Temporary Substation Easements (each, as may be updated by mutual agreement of the Parties following the Effective Date, as necessary); (k) the METC Easements; (l) any Lien for or in respect of Taxes or other governmental charges that are not yet delinquent (or which may be paid without interest or penalties) or that are being contested in good faith by appropriate proceedings and for which adequate reserves have been established in accordance with GAAP; (m) the terms and conditions of the Material Contracts, the Material Permits, the Material Environmental Permits and the other Project Permits Made Available to Purchaser as of the Effective Date; (n) any Lien that is released at or prior to the Closing; (o) Liens for mechanics', materialmen's, workmen's, repairmen's, warehousemen's, carriers' and similar Liens arising or incurred in the ordinary course of business that are not yet due and payable; and (p) unrecorded licenses for landowner improvements such as docks and sea walls Made Available to Purchaser.

"Person" shall mean any individual, estate, trust, partnership, limited liability company, limited liability partnership, corporation, Governmental Authority or other legal entity and any unincorporated association.

"PLLI" shall have the meaning set forth in **Section 7.11**.

"Post-Closing Tax Period" shall mean (a) any Tax period beginning after the Closing Date and (b) with respect to any Straddle Period, the portion of such Straddle Period beginning on the Day after the Closing Date and ending on the last Day of such Straddle Period.

"Power Purchase Agreement" shall mean the Power Purchase Agreement, dated as of the Effective Date, by and between Seller and Purchaser.

"PPA Price" shall have the meaning set forth in the Power Purchase Agreement for "Energy Purchase Price".

"Pre-Closing Tax Period" shall mean (a) any Tax period ending on or before the Closing Date and (b) with respect to any Straddle Period, the portion of such Straddle Period beginning on the first Day of such Straddle Period and ending on (and including) the Closing Date.

"Project" or "Projects" shall have the meaning set forth in the Recitals.

"Project Assets" shall mean, all assets, properties, rights and interests of every kind, nature, character and description (whether real, personal or mixed), whether tangible or intangible, and at the Project site, owned or leased by, or licensed to, Seller as of the Closing Date, in each case, which solely relate to, are solely used by, or solely held for use in connection with operation, maintenance, repair, ownership or use of the Projects (in each case, excluding the Excluded Assets), including:

(a) the Books and Records;

(b) the Project Contracts;

(c) the Project Equipment;

(d) the Tangible Personal Property;

(e) the Project Permits;

(f) the Leases;

(g) the Fee Simple Real Property; and

(h) the supplies, inventory and repair or replacement parts relating to a Project.

"Project Contracts" shall mean all Contracts to which Seller is a party related solely to the Projects and Project Assets, including the Material Contracts and the Contracts described in **clause (b)** of the definition Real Property Agreements but excluding the Excluded Contracts.

"Project Equipment" shall mean all equipment and other Tangible Personal Property related solely to the Projects, including but not limited to the equipment and Tangible Personal Property described on **Schedule 1.1(b)**.

"Project Permits" shall mean all Permits obtained and issued in the name of Seller, an Affiliate of Seller or a Project, in each case, necessary under or otherwise required by applicable Law for the operation, maintenance, repair, ownership and use of the Projects and Project Assets, including the Material Permits and the Material Environmental Permits, but excluding the Excluded Permits and ministerial Permits of a type that are routinely granted on application.

"Property Taxes" shall have the meaning set forth in **Section 8.4(b)(i)**.

"Prorated Costs" shall have the meaning set forth in **Section 8.4(a)**.

"Prudent Utility Practice" shall mean the practices, methods and acts generally followed by the electric utility industry during the relevant period with respect to generation facilities similar to the Projects as changed from time to time, which generally include, but are not limited to, engineering, operating, safety, reliability, equipment, and adherence to applicable industry codes, standards, regulations and laws. Prudent Utility Practices are not intended to be limited to the optimum practices, methods or acts to the exclusion of others, but rather are intended to include acceptable practices, methods and acts generally accepted in the energy generation industry in the United States.

"PTO" shall have the meaning set forth in **Section 5.17(a)**.

"Purchase Price" shall have the meaning set forth in **Section 2.2(a)**.

"Purchaser" shall have the meaning set forth in the Preamble.

"Purchaser 401(k) Plan" shall have the meaning set forth in **Section 7.6(g)**.

"Purchaser Indemnified Party" shall have the meaning set forth in **Section 9.2**.

"Purchaser Post-Closing Credits" shall have the meaning set forth in **Section 8.4(a)**.

"Purchaser Proration Credits" shall have the meaning set forth in **Section 8.4(a)**.

"Purchaser Regulatory Approvals" shall mean, other than the Required Regulatory Approvals, the HSR Approval and the FCC Approvals, the approvals, registrations or filings that the Purchaser needs to obtain in order to complete the transaction and operate the Projects as set forth on **Schedule 4.1(j)**.

"Purchaser Required Consents" shall have the meaning set forth in **Section 6.5**.

"Purchaser Taxes" shall have the meaning set forth in **Section 9.3(d)**.

"Purchaser Title Objections" shall have the meaning set forth in **Section 3.1(c)(i)**.

"Purchaser Title Objections Cap" shall have the meaning set forth in **Section 3.1(c)(iv)**.

"Purchaser Transaction Expenses" shall mean, without duplication, the aggregate amount of all fees, costs and expenses reasonably incurred by Purchaser or any of its Affiliates in connection with the negotiation, preparation and execution of this Agreement and the Ancillary Agreements and the consummation of the transactions contemplated by this Agreement, which shall include any reasonable legal, accounting, financial advisory and other third party advisory or consulting fees and expenses.

"Purchaser's Knowledge" shall mean the actual knowledge of any Designated Purchaser Representative, with no heightened duty to investigate imposed on such individual above that of an ordinary and prudent individual in a similar position or involved in a similar transaction or position.

"R&W Insurer" shall mean Ryan Transactional Risk as the claim representative for the insurers under the R&W Policy.

"R&W Policy" shall have the meaning set forth in **Section 7.8(a)**.

"Real Property Agreements" shall mean (a) all of the Leases and (b) all other Contracts that grant, convey or assign to Seller or any of its Affiliates a fee, leasehold, easement or other ownership, use or occupancy interest, or an option to acquire any of the foregoing interests, in the Land for the ownership, use, operation or maintenance of the Projects, to which Seller or any of its Affiliates is a party, together with all amendments, assignments and modifications as to any of such Contracts.

"Regulatory Disallowance Agreement" shall mean the Regulatory Disallowance Agreement between the Parties, substantially in the form attached hereto as **Exhibit T** incorporated by reference herein, to be dated as of the Closing Date and delivered by the Parties at Closing.

"Release" shall mean, with respect to Hazardous Materials, any sudden, intermittent or gradual release or discharge of any Hazardous Materials in the Environment, including any burial, incineration, spray, injection, abandonment, deposit, spillage, leakage, seepage, pouring, emission, emptying, throwing, dumping, placing, exhausting, escape, leaching, migration, dispersal, dispensing, disposal or other movement of any Hazardous Materials in the Environment regardless of whether such Release occurred before the date hereof.

"Replacement Support Obligation" shall have the meaning set forth in **Section 7.18**.

"Required Regulatory Approvals" shall mean the FERC Approvals and the MPSC Approval.

"Reserved Easements" shall mean the easements for distribution and Substation improvements sitting as well as Seller's electrical distribution equipment, substantially in the form set forth in **Exhibit E-1** and as generally described on **Exhibit O** attached hereto and incorporated by reference herein, respectively, which in each case may be updated by mutual agreement of the Parties following the Effective Date pursuant to **Section 3.1(f)** and **Section 3.1(g)**.

"Reserved Easements Real Property" shall mean, with respect to each Reserved Easement, the real property subject to such Reserved Easement generally described and depicted on **Exhibit O** attached hereto,

which may be updated by mutual agreement of the Parties following the Effective Date, pursuant to **Section 3.1(f)** and **Section 3.1(g)**.

"Residential Fee Simple Real Property" shall have the meaning set forth in **Section 4.1(u)**.

"Residential Fee Simple Real Property Deed" shall mean, with respect to the Residential Fee Simple Real Property, the covenant deed conveying the Residential Fee Simple Real Property to Purchaser substantially in the form attached hereto as **Exhibit E-2**.

"Response Notice" shall have the meaning set forth in **Section 9.5**.

"Restoration Obligations" shall have the meaning set forth in **Section 7.5(c)**.

"Rogers Project" shall have the meaning set forth in the Recitals.

"Seller" shall have the meaning set forth in the Preamble.

"Seller 401(k) Plans" shall have the meaning set forth in **Section 7.6(g)**.

"Seller Employee" shall mean an employee of Seller that is not a Transferred Employee and continues employment with Seller subsequent to the Closing Date.

"Seller Indemnified Party" shall have the meaning set forth in **Section 9.3**.

"Seller Proration Credits" shall have the meaning set forth in **Section 8.4(a)**.

"Seller Required Consents" shall have the meaning set forth in **Section 5.5**.

"Seller Taxes" shall mean any and all liabilities for the following Taxes, in each instance regardless of whether any such Taxes are reflected or shown as due or payable on any Tax Return, and regardless of whether any such Taxes are assessed, payable or due prior to, on or after the Closing Date: (a) any and all Property Taxes for which Seller is responsible pursuant to **Section 8.4(b)**; (b) any and all Taxes (other than Property Taxes for which Seller is responsible pursuant to **Section 8.4(b)**) imposed on or payable by Seller or any of its Affiliates, regardless of the Tax period to which such Taxes relate; (c) any and all Taxes imposed on or payable in respect to any of the Projects or any of the Project Assets, or for which any of the Projects or any of the Project Assets may be liable, assessed, or subject, in each case, to the extent such Taxes are attributable to the Pre-Closing Tax Period; (d) any and all Taxes of any member of an affiliated, consolidated, combined, or unitary group of which Seller (or any predecessor) is or was a member on or prior to the Closing Date, including pursuant to Treasury Regulations Section 1.1502-6 or any analogous or similar state, local, or foreign Law; (e) any and all Taxes of any Person imposed on or payable by Purchaser as a transferee or successor, by contract or pursuant to any Law or otherwise, in respect of the Project or any of the Project Assets, which Taxes relate to an event or transaction occurring on or prior to the Closing Date; and (f) Transfer Taxes for which Seller is responsible pursuant to **Section 8.4(d)**.

"Seller Transaction Expenses" shall mean, without duplication, the aggregate amount of all fees, costs and expenses reasonably incurred by Seller or any of its Affiliates in connection with the negotiation, preparation and execution of this Agreement and the Ancillary Agreements and the consummation of the transactions contemplated by this Agreement, which shall include any reasonable legal, accounting, financial advisory and other third party advisory or consulting fees and other expenses.

"Seller-Allocated Amounts" shall mean, with respect to any condemnation or eminent domain proceedings with respect to any portion of a Project Asset that occurs after the Effective Date, any portion of any such award or proceeds that is allocable to loss of use of such Project Asset prior to Closing.

"Seller's Knowledge" shall mean the actual knowledge of any Designated Seller Representative, with no heightened duty to investigate imposed on such individual above that of an ordinary and prudent individual in a similar position or involved in a similar transaction or position.

"Seller's Marks" shall mean (a) the name "Consumers Energy Company" or the names of any other Affiliate of Seller or any variations or derivations thereof, whether alone or in combination with one or more other words, (b) any trademarks, trade names, or other intellectual property rights owned or used by Seller or otherwise associated with Seller or any of its Affiliates, and (c) the marks listed on **Exhibit R**.

"Seller's Title Election Period" shall have the meaning set forth in **Section 3.1(c)(i)**.

"Seller's Title Response" shall have the meaning set forth in **Section 3.1(c)(i)**.

"Shoreline Licenses" shall mean the agreements regarding usage and access to shorelines listed in **Exhibit D**.

"Straddle Period" shall mean any Tax period that begins on or before, and ends after, the Closing Date.

"Subsidiary" shall mean, with respect to each Project, the Person wholly owned by Purchaser which on or after the Closing Date owns the Project Assets associated with such Project.

"Substation" shall mean a substation described on **Exhibit B**.

"Support Obligations" shall have the meaning set forth in **Section 5.19**.

"Survey" shall mean, for each Project, an ALTA/NSPS survey of the applicable Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property.

"Survey Order Date" shall have the meaning set forth in **Section 3.1(b)**.

"Tangible Personal Property" shall mean the tangible personal property owned by Seller related solely to the Projects and Project Assets and located on the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property, including but not limited to (a) the Project Equipment located on the Fee Simple Real Property and the Calkins Bridge Project Easement Reservation Real Property used in the operation of the Projects and (b) the items listed on **Schedule 1.1(b)**, but shall exclude the Excluded Assets.

"Target Employees" shall mean (a) all Non-Union Employees providing services to the Projects, and (b) all Union Employees providing services to the Projects who do not exercise bumping rights in accordance with the Collective Bargaining Agreement.

"Tax" or "Taxes" shall mean any taxes, fees, levies, duties, tariffs, imposts and other charges of any kind, imposed by or payable to any Governmental Authority, including taxes or other charges on, measured by or with respect to income, gross or net receipts, capital, net worth, real or personal property, sales, use, capital gain, transfer, excise, license, production, unclaimed property, escheatment, franchise, employment, social security (or similar), occupation, payroll, registration, governmental pension or

insurance, withholding, royalty, severance, stamp or documentary, ad valorem, value added, business, premium, windfall profits, environmental, custom, duty, capital stock, profits, withholding, unemployment, disability, alternative or add-on minimum, estimated or other tax (including any interest, penalties, or additions to tax), in each case including any interest, penalty, or addition thereto, whether disputed or not, and including any obligation to indemnify or otherwise assume or succeed to the Tax Liability of any other Person.

"Tax Compliance Certificate" shall have the meaning set forth in **Section 8.5(b)**.

"Tax Purchase Price" shall have the meaning set forth in **Section 2.3(a)**.

"Tax Returns" shall mean any report, declaration, claim for refund, form, return, election, statement or other information (including any amendments) required to be supplied to a Governmental Authority or maintained by a Person with respect to Taxes, including information returns, any amendments thereof or schedule or attachment thereto and any documents (a) with respect to the calculation, determination, assessment or collection of any Tax, or (b) accompanying requests for the extension of time in which to file any such report, form, return, statement or other information.

"Temporary Substation Easements" shall mean those temporary substation easements substantially in the form attached hereto as **Exhibit C**, incorporated by reference herein, which may be updated by mutual agreement of the Parties following the Effective Date, pursuant to **Section 3.1(f)** and **Section 3.1(g)**.

"Temporary Substation Easements Real Property" shall mean, with respect to each Temporary Substation Easement, the real property subject to such Temporary Substation Easement listed on **Exhibit C**, which may be updated by mutual agreement of the Parties following the Effective Date, pursuant to **Section 3.1(f)** and **Section 3.1(g)**.

"Third Party Claim" shall have the meaning set forth in **Section 9.7(a)**.

"Third Party Claim Response Period" shall have the meaning set forth in **Section 9.7(a)**.

"Tippy Project" shall have the meaning set forth in the Recitals.

"Title Commitment" shall have the meaning set forth in **Section 3.1(a).**

"Title Company" shall mean, subject to the terms of **Section 3.1(a)**: (a) Fidelity National Title; (b) Transnation Title; (c) Stewart National Title; (d) Michigan Trusted Title; (e) Amrock, LLC; and (f) ASK Services, Inc.

"Title Documents" shall mean, in respect of a Title Commitment, all documents referenced in such Title Commitment.

"Title Objection Date" shall mean, with respect to each Project, the Day that is thirty (30) Business Days after the later of Purchaser's receipt of (a) the Title Commitment (including all Title Documents) for the Fee Simple Real Property or, if applicable, the Calkins Bridge Project Easement Reservation Real Property in respect of such Project and (b) a Survey, if ordered by Purchaser, in respect of such Project.

"Title Objection Notice" shall have the meaning set forth in **Section 3.1(c)(i)**.

"Title Policy" shall mean the applicable issuing Title Company's irrevocable commitment to issue a standard ALTA owner's title insurance policy to Purchaser at Purchaser's sole cost in a policy amount to

be determined by Purchaser in its sole discretion, insuring that title to the Fee Simple Real Property and the Calkins Bridge Project Easement Reservation Real Property described therein is vested in Purchaser subject only to the Permitted Exceptions.

"Tower Leaseback Agreements" shall mean (a) that certain Master Leaseback Agreement by and between Vertical Bridge Towers IV, LLC and Consumers Energy Company, dated as of December 5, 2023 and (b) that certain Master Leaseback Agreement by and between Vertical Bridge NTCF, LLC and Consumers Energy Company, dated as of December 5, 2023.

"Transfer Taxes" shall mean any transfer, documentary, sales, use, stamp, registration, value added, and other such Taxes and all conveyance fees, recording charges (including transfer taxes associated with recording of the Deed), and other fees and charges (including any penalties and interest) incurred in connection with the transactions contemplated by this Agreement and the Ancillary Agreements.

"Transferred Employees" shall have the meaning set forth in **Section 7.6(a)**.

"Transferred Non-Union Employees" shall have the meaning set forth in **Section 7.6(c)**.

"Transferred Union Employees" shall have the meaning set forth in **Section 7.6(b)**.

"Transition Services Agreement" shall mean the Transition Services Agreement between the Parties, substantially in the form attached hereto as **Exhibit P** incorporated by reference herein, with such supplements or other changes are as otherwise agreed to by the Parties pursuant to **Section 7.13**, and to be delivered by the Parties at Closing.

"Treasury Regulations" shall mean the regulations promulgated under authority of the Code by the United States Department of Treasury, as amended from time to time. All references herein to specific sections of the regulations shall be deemed also to refer to any corresponding provisions of succeeding regulations, and any reference to temporary regulations shall be deemed also to refer to any corresponding provisions of final regulations.

"Trust Indenture" shall mean the indenture dated as of September 1, 1945, between Consumers Power Company (now known as Consumers Energy Company) and City Bank Farmers Trust Company (now held by The Bank of New York Mellon, successor trustee) and all supplemental indentures thereto, as may be further amended and/or supplemented from time to time.

"Union" shall mean, collectively, the Utility Workers Union of America (affiliated with the Congress of Industrial Organizations) and its Michigan State Utility Workers Counsel.

"Union Employees" shall mean the Union employees of Seller listed on **Part I** of **Schedule 5.16(b)**.

"Union Notice" shall mean a notice to the Union from Purchaser regarding the Closing and Purchaser's assumption of the Collective Bargaining Agreement, substantially in the form attached hereto as **Exhibit W-2** incorporated by reference herein.

"WARN Act" shall mean the Worker Adjustment and Retraining Notification Act, 29 U.S. Stat. § 2101 *et seq*. and any state law equivalent.

"Webber Project" shall have the meaning set forth in the Recitals.

Section 1.2. Terms Generally.

(a) The definitions in **Section 1.1** shall apply equally to both singular and plural forms and to correlative forms of the terms defined.

(b) Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms.

(c) The words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation".

(d) The words "hereby", "herewith", "hereto", "herein", "hereof", "hereunder" and words of similar import refer to this Agreement (including exhibits, schedules and Disclosure Schedules to this Agreement) in its entirety and not to any part hereof unless the context shall otherwise require.

(e) The word "or" has the inclusive meaning represented by the phrase "and/or".

(f) Unless the context shall otherwise require, all references herein to Articles, Sections, Exhibits, Schedules and the Disclosure Schedules shall be deemed references to Articles, Sections and Exhibits of, and Schedules and the Disclosure Schedules to, this Agreement and references to "paragraphs" or "clauses" shall be to separate paragraphs or clauses of the section or subsection in which the reference occurs.

(g) Unless the context shall otherwise require, any references to any Contract (including this Agreement), document or Law shall be deemed to be references to such Contract, document or Law as amended, supplemented or modified from time to time in accordance with its terms and the terms hereof, as applicable, and in effect at any given time (and, in the case of any Law, to any successor provisions); *provided*, that any Contract or document listed in the Disclosure Schedules shall only be deemed to include any amendments, supplements or modifications that have been Made Available to Purchaser.

(h) Unless the context shall otherwise require, references to any Person include references to such Person's successors and permitted assigns, and in the case of any Governmental Authority, to any Person(s) succeeding to its functions and capacities.

(i) Any reference to any federal, state, local, or foreign statute or Law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context shall otherwise require.

(j) All monetary figures shall be in United States Dollars unless otherwise specified.

(k) The phrase "to the extent" shall mean the degree to which a subject or thing extends, and such phrase shall not simply mean "if".

(l) All accounting terms used herein and not expressly defined herein shall have the meanings given to them under GAAP.

(m) The phrase "ordinary course of business" shall mean "ordinary course of business, consistent with past practice (including with respect to quantity and timing) during the Lookback Period".

ARTICLE 2

AGREEMENT; PURCHASE PRICE; ASSUMED LIABILITIES AND EXCLUDED LIABILITIES

Section 2.1. Agreement to Sell and Purchase; Excluded Assets; Assumed Liabilities; Excluded Liabilities.

(a) Purchase and Sale. Subject to the terms and provisions hereof, at the Closing, Seller shall (i) sell, transfer, convey, assign and deliver to Purchaser, and Purchaser shall purchase and accept from Seller, all of Seller's right, title and interests in, to and under the Project Assets, but specifically excluding the Excluded Assets, free and clear of all Liens other than Permitted Exceptions, and (ii) transfer, convey, assign and deliver to Purchaser, and Purchaser shall accept from Seller, all of Seller's right, title and interests in, to and under the Residential Fee Simple Real Property, subject to **Section 2.1(e)**.

(b) Excluded Assets. Seller shall have no obligation to, and does not, transfer any interest or rights in any of the following assets and properties owned by Seller or, in the case of **clause (i)** below, a third party (the "Excluded Assets"):

(i) (A) any improvements, equipment, systems, facilities or structures owned by Seller or third parties that are located within the Reserved Easements Real Property and Temporary Substation Easements Real Property, including the Substations and (B) any improvements, equipment, systems, facilities or structures owned by METC or third parties that are located within the METC Easements, which, in each case, for the avoidance of doubt, does not include any Tangible Personal Property listed in **Schedule 1.1(b)**;

(ii) materials relating to Seller's marketing efforts and the other parts of the process related to the potential sale of the Project Assets, including all documents, information and communications with other potential purchasers;

(iii) projections, forecasts and other internal memoranda or materials;

(iv) appraisals, internal analyses, computer software (except that third party software licensed to Seller and used solely in the operation of the Projects which is transferable without notice to and/or consent of the licensor and without expense to Seller shall be considered a Project Asset), and submissions relating to Seller's obtaining of internal authorizations or approvals;

(v) attorney and accountant work product, and all other materials subject to any legal privilege in favor of Seller;

(vi) organizational documents relating to Seller or its Affiliates;

(vii) the Excluded Permits;

(viii) any Project Assets removed from the FERC Licensed Property pursuant to the FERC License Amendment Approvals;

(ix) the Excluded Contracts, each of which is listed on **Schedule 2.1(b)**; and

(x) those assets described on **Schedule 2.1(b)**.

(c) Assumed Liabilities. From and after the Closing, Purchaser shall assume, and Purchaser hereby agrees to pay, perform according to their terms, satisfy and discharge when due or when required to be performed or discharged all Liabilities of Seller of every kind, nature, character and description relating to, arising from or associated with the Projects or the Project Assets, regardless of whether any such Liability arose or was incurred prior to, on or after the Closing, other than Excluded Liabilities (the "Assumed Liabilities"). For the avoidance of doubt, Assumed Liabilities shall include all Liabilities in respect of the Project Contracts and the Project Permits (other than Excluded Liabilities), and the Assumed Environmental Liabilities, in each case regardless of whether any such Liabilities arose or were incurred prior to, on or after the Closing. From and after the Closing, Seller shall have no Liability with respect to the Assumed Liabilities.

(d) Excluded Liabilities. Purchaser shall have no obligation to and does not assume any of the following Liabilities of Seller, which shall be retained by and remain the sole responsibility of Seller (the "Excluded Liabilities"):

(i) all Liabilities relating to, arising from or associated with the Excluded Assets, whether arising prior to, on or after the Closing;

(ii) Liabilities resulting from the default by Seller or any of its Affiliates of any Project Contract arising or accruing on or prior to the Closing;

(iii) Liabilities resulting from the default by Seller or any of its Affiliates of any Project Permit, arising or accruing during the Lookback Period;

(iv) Liabilities resulting from (A) Seller's employment of any Business Employee, including with respect to any Employee Benefit Plan offered or maintained by Seller (i.e., PTO, bonuses, etc.), (B) Seller's employment of the Target Employees prior to the Closing Date, (C) or arising out of or related to the Collective Bargaining Agreement (other than Liabilities resulting from, arising out of or related to the Transferred Union Employees first occurring after the Closing Date), and (D) those items listed on **Schedule 2.1(d)**;

(v) all Liabilities for any Seller Taxes;

(vi) Liabilities caused by the acts or omissions of Seller or any of its Affiliates on the Reserved Easements Real Property and the Temporary Substation Easements Real Property, including in connection with the construction, operation, maintenance and decommissioning of the Substations and distributions lines located on the Reserved Easements Real Property and the Temporary Substation Easements Real Property and, in each case, not caused by the acts or omissions of Purchaser or any of Affiliates on the Reserved Easements Real Property or the Temporary Substation Easements Real Property, whether arising prior to, on or after the Closing (collectively, the "Excluded Environmental Liabilities");

(vii) all indebtedness of Seller;

(viii) any liabilities for the payment of services incurred in connection with the negotiation, preparation or execution of this Agreement or the transactions contemplated

by this Agreement by or on behalf of Seller, including any fees and disbursements of legal counsel, accountants, brokers, financial advisors or other representatives of Seller;

(ix) all Liabilities arising out of or related to any acts or omissions of Seller relating to, arising from or associated with the Project Assets occurring after the Closing, except the foregoing shall not apply to Seller's performance under the Consumers Interconnection Agreements;

(x) all liabilities for the payment of work and services performed under the Project Contracts prior to the Closing Date; and

(xi) all Liabilities listed on **Schedule 2.1(d)**.

(e) Residential Fee Simple Real Property. Notwithstanding anything in this Agreement to the contrary, except as expressly set forth in this **Section 2.1(e)**, **Section 4.1(u)**, and **Section 8.2(u)**, (i) the Residential Fee Simple Real Property and any agreements related thereto shall not be considered Project Assets or Excluded Assets for purposes of this Agreement, and (ii) the terms and conditions of this Agreement, including Seller's representations and warranties contained herein, shall not apply to the Residential Fee Simple Real Property and any agreements related thereto.

Section 2.2. Purchase Price.

(a) Consideration. The aggregate consideration for all of the Project Assets and the assumption by Purchaser of the Assumed Liabilities shall be an amount equal to (i) Thirteen Dollars ($13.00), *minus* (ii) the Purchaser Proration Credit, as determined in accordance with **Section 8.4**, *plus* (iii) the Seller Proration Credit, as determined in accordance with **Section 8.4** (such aggregate amount of **clauses (i)**, **(ii)** and **(iii)**, the "Purchase Price").

(b) Method of Payment of Purchase Price. Subject to **Section 2.2(c)**, the Purchase Price, (i) if such amount is a positive number, shall be paid by Purchaser to Seller by wire transfer of immediately available funds to the account specified in writing by Seller for such purpose or, if so requested in writing by Seller, by such alternative means of delivery of immediately available funds or other method of payment as is reasonably acceptable to Purchaser, or (ii) if such amount is a negative number, shall be paid by Seller to Purchaser by wire transfer of immediately available funds to the account specified in writing by Purchaser for such purpose or, if so requested in writing by Purchaser, by such alternative means of delivery of immediately available funds or other method of payment as is reasonably acceptable to Seller.

(c) Closing Payment. On the Closing Date, Purchaser (if the Purchase Price is a positive number) shall pay to Seller, or Seller (if the Purchase Price is a negative number) shall pay to Purchaser, an amount equal to one hundred percent (100%) of the Purchase Price (the "Closing Payment").

Section 2.3. Intended Tax Treatment and Purchase Price Allocation.

(a) For purposes of this Agreement, the Parties agree that for U.S. federal Income Tax purposes, and for purposes of any corresponding provision under state or local Tax Law, (i) Purchaser's purchase of the Project Assets from Seller in exchange for the Purchase Price (including any adjustments thereto pursuant to this Agreement and any Assumed Liabilities and other amounts treated as taxable consideration for such the Project Assets for Income Tax purposes) (the "Tax Purchase Price") shall be treated as the taxable purchase and sale of such assets; and (ii) no Liability assumed by Purchaser in

connection with the transactions contemplated by this Agreement that is attributable to deferred revenue shall be treated under *James M. Pierce Corp. v. Commissioner*, 326 F.2d 67 (8th Cir. 1964), as giving rise to taxable income of the Purchaser or its Affiliates (collectively, the "Intended Tax Treatment"). Each of the Parties agrees to prepare and file all applicable Tax Returns in accordance with such Intended Tax Treatment and will not take any inconsistent position on any Tax Return or during the course of any audit, litigation, or other proceeding with respect to Taxes, except as otherwise required by applicable Law following a "determination" within the meaning of Section 1313(a) of the Code or similar provision of other applicable Law.

(b) For U.S. federal (and applicable state and local) Income Tax purposes, the Parties shall allocate the Tax Purchase Price among the Project Assets on an allocation schedule in accordance with Section 1060 of the Code and the Treasury Regulations promulgated thereunder (the "Allocation Methodology"). Within sixty (60) Days following the Closing Date, Purchaser shall deliver to Seller an allocation schedule of the Tax Purchase Price among the Project Assets for Income Tax purposes in accordance with the Allocation Methodology (the "Allocation Schedule") for Seller's review and comment. Seller shall review the Allocation Schedule and provide any comments to Purchaser within thirty (30) Days from delivery to Seller (the "Allocation Review Period"). If Seller does not submit any comments to the Allocation Schedule within such Allocation Review Period, then Seller will be deemed to have approved such Allocation Schedule as prepared by Purchaser. If Seller delivers comments to Purchaser with respect to the Allocation Schedule within such Allocation Review Period, Purchaser and Seller shall use good faith efforts to resolve any dispute in connection with such comments. In the event Purchaser and Seller are unable to agree on any such comments to the Allocation Schedule within ten (10) Days after Seller provides its comments, Purchaser and Seller shall engage the Accounting Firm to resolve the dispute in accordance with the Allocation Methodology. In resolving any dispute with respect to the Allocation Schedule, the Accounting Firm (i) shall be bound by the Allocation Methodology, (ii) may not assign a value to any item greater than the highest value claimed for such item or less than the lowest value for such item claimed by either Purchaser or Seller, (iii) shall restrict its decision to such items included in Seller's objection(s) which are then in dispute, (iv) may review only the written presentations of Purchaser and Seller in resolving any matter which is in dispute and relevant provisions of applicable Tax Law, and (v) shall render its decision in writing within thirty (30) Days after the disputed item(s) have been submitted to it. The resolution of any disputed items by the Accounting Firm shall be conclusive and binding on the Parties for the purposes of this Agreement. The costs of the Accounting Firm shall be borne by each Party in the percentage inversely proportionate to the percentage of the total amount of the total items submitted for dispute that are resolved in such Party's favor. Any adjustments to the Purchase Price shall be allocated in accordance with the Agreed Allocation.

(c) The Parties agree to file their respective IRS Forms 8594 and all federal, state and local Tax Returns in accordance with the Allocation Schedule (as finally determined in accordance with **Section 2.3(b)**) (such allocation, the "Agreed Allocation") and no Party shall take or permit others to take on its behalf any position, whether in connection with a Tax audit, a Tax Return or otherwise, that is inconsistent with the Agreed Allocation unless required to do so pursuant to a final "determination" within the meaning of Section 1313(a) of the Code or other applicable Law; *provided*, *however*, that nothing contained herein shall prevent Seller or Purchaser or any of their respective Affiliates from settling any proposed deficiency or adjustment by any Governmental Authority based upon or arising out of the Agreed Allocation and no Party shall be required to contest or litigate in any forum any proposed deficiency or adjustment by any Governmental Authority challenging the Agreed Allocation; and *provided further*, that no Party will be unreasonably impeded in its ability and discretion to negotiate, compromise or settle any Tax audit, claim or similar proceeding in connection with the Agreed Allocation. Notwithstanding anything herein to the contrary, the requirements set forth in this **Section 2.3** shall not bind Purchaser (or its Affiliates) in determining the allocation of the Tax Purchase Price for purposes of GAAP in preparing their financial statements.

Section 2.4. Withholding. Purchaser or its designees will be entitled to deduct or withhold from any amounts payable under this Agreement any Taxes or other amounts required under the Code or any applicable Law to be deducted and withheld; *provided*, that (a) Purchaser shall provide Seller with notice as soon as reasonably practicable upon becoming aware of any such requirement to deduct and withhold from any consideration otherwise payable to Seller (and in any case prior to making the deduction or withholding), and (b) the Parties shall use their respective commercially reasonable efforts in seeking to reduce or eliminate any such withholding or deduction to the extent permitted by applicable Law. To the extent that any such amounts are so deducted or withheld, such amounts will be treated for all purposes of this Agreement as having been paid to the Person in respect of which such deduction and withholding was made.

ARTICLE 3

SURVEY AND TITLE COMMITMENT

Section 3.1. Title and Survey.

(a) Title. With respect to the Fee Simple Real Property or, if applicable, the Calkins Bridge Project Easement Reservation Real Property used in connection with each Project, Seller shall, at Seller's cost, order (to the extent not ordered prior to the Effective Date) a commitment of title insurance issued by the applicable Title Company with respect to the applicable Fee Simple Real Property or Calkins Bridge Project Easement Reservation Real Property (each a "Title Commitment") and request copies of all Title Documents from the Title Company within five (5) Business Days after the Effective Date and upon receipt thereof, Seller shall deliver each applicable Title Commitment, including all Title Documents, to Purchaser. Following delivery of all of the Title Commitments, the Parties shall endeavor to engage a single Title Company to act as Escrow Agent in connection with the issuance of each Title Policy and the conveyance of fee title to the Fee Simple Real Property.

(b) Survey. Purchaser acknowledges that Seller has provided the Internal Mapping to Purchaser prior to the Effective Date. Purchaser may, at its sole cost and expense, have one or more Surveys prepared for each Project for Purchaser's benefit. In the event Purchaser elects to have the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property surveyed, Purchaser shall order the applicable Surveys, if any, within the later of ten (10) Business Days (the "Survey Order Date") after the later of receipt of the applicable Title Commitment or the Effective Date, which Survey Order Date may be extended by up to an addition twenty (20) Business Days by the mutual consent of Purchaser and Seller, such consent not to be unreasonably withheld, conditioned or delayed. Purchaser shall provide written notice to Seller promptly after the Survey Order Date regarding Purchaser's decision to order a Survey and shall keep Seller apprised as to the status of Survey completion. Purchaser's failure to order a Survey in respect to any applicable Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property by the applicable Survey Order Date shall be deemed a waiver of any right to make objection to anything that would be disclosed by such Survey and/or a physical inspection of such Fee Simple Real Property or Calkins Bridge Project Easement Reservation Real Property, as applicable.

(c) Objections.

(i) Purchaser shall have until the Title Objection Date for each Project to deliver to Seller a written notice (the "Title Objection Notice") that sets forth in reasonable detail any objections that Purchaser has to any exception referenced in the Title Commitment or Survey, if obtained, for such Project (the "Purchaser Title Objections"); *provided*, *however*, that Purchaser shall have no right to object to any Permitted Exceptions

and shall only be entitled to object to exceptions (and exceptions shall only qualify as Purchaser Title Objections) if: (A) the costs to correct and/or remove any such exception is reasonably likely to exceed Fifty Thousand Dollars ($50,000), individually, or Two Hundred Thousand Dollars ($200,000), in the aggregate, when considered with other exceptions in the Title Commitment or Survey; (B) such exception materially and adversely affects, or is reasonably likely to materially and adversely affect, as determined by Purchaser in its reasonable discretion, Purchaser's ability to use and operate the applicable Project consistent with past practice during the Lookback Period; or (C) such exception is reasonably likely to require the removal or relocation of material Project Equipment used on the Fee Simple Real Property or, if applicable, the Calkins Bridge Project Easement Reservation Real Property in connection with the generation of electricity from the applicable Project. Seller shall have thirty (30) Business Days from its receipt of any Title Objection Notice ("Seller's Title Election Period") to deliver to Purchaser notice as to whether Seller elects to use commercially reasonable efforts to cure any of the Purchaser Title Objections by the Closing Date ("Seller's Title Response"). If Seller fails to provide any Seller's Title Response before the end of Seller's Title Election Period, Seller shall be deemed to have elected not to cure all of the Purchaser Title Objections.

(ii) If Seller elects, or is deemed to have elected, not to cure any one or more of the Purchaser Title Objections, such Purchaser Title Objections shall constitute Permitted Exceptions and Purchaser shall have until the date that is twenty (20) Business Days after Purchaser's receipt of Seller's Title Response (or, if Seller fails to provide any Seller's Title Response to Purchaser Title Objections, twenty (20) Business Days after the date on which Seller's Title Election Period expired) to deliver notice to Seller whether Purchaser will (A) take title to the Fee Simple Real Property or, if applicable, the real property interest in the Calkins Bridge Project Easement Reservation Real Property subject to such Purchaser Title Objection that Seller elected (or was deemed to have elected) not to cure, in which case such Purchaser Title Objections shall constitute Permitted Exceptions, or (B) elect to terminate this Agreement by providing written notice to Seller of such election. If Purchaser elects to terminate this Agreement pursuant to this **Section 3.1(c)(ii)**, then this Agreement shall terminate, and Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement. In the absence of a timely response by Purchaser in accordance with this **Section 3.1(c)(ii)**, Purchaser shall be deemed to have elected to take title subject to such Purchaser Title Objections that Seller elected (or was deemed to have elected) not to cure, in which case such Purchaser Title Objections shall constitute Permitted Exceptions.

(iii) If Seller elects to use commercially reasonable efforts to cure any one or more of the Purchaser Title Objections, Seller shall have until the Closing Date to complete such cure, failing which Purchaser shall have the option of either (A) proceeding with the Closing (as extended, if necessary) and accepting the title as it then is, or (B) terminating this Agreement by written notice to Seller on the earlier of the Closing Date or the date that is ten (10) Business Days from written notice from Seller to Purchaser that one or more of the Purchaser Title Objections will not be cured by the Closing Date. If Purchaser elects to terminate this Agreement pursuant to this **Section 3.1(c)(iii)**, then this Agreement shall terminate and if Seller has failed to use commercially reasonable efforts to cure any one or more of the Purchaser Title Objections (and was not excused from using such commercially reasonable efforts pursuant to **Section 3.1(c)(iv)** as a result of the Purchaser Title Objections Cap), then Seller shall pay to Purchaser the Purchaser Transaction Expenses,

and, subject to **Section 11.3**, Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement.

(iv) If Seller elects to cure any one or more Purchaser Title Objections, Seller shall in no event be required to bring suit to clear any claimed title or survey defects. Except for any Automatic Objections, Seller shall not be required to expend more than an aggregate total of One Million Dollars ($1,000,000) to cure all Purchaser Title Objections in respect of all of the Projects (the "Purchaser Title Objections Cap") (thus, by way of example, if Seller expends up to the Purchaser Title Objections Cap in an attempt to cure one or more Purchaser Title Objections, then Seller shall have no further obligation to spend additional funds in connection with any Purchaser Title Objections). Seller shall provide Purchaser written notice, which shall include reasonable supporting evidence and documentation, that Seller has expended more than the Purchaser Title Objections Cap to cure Purchaser Title Objections and that Seller will cease efforts to cure Purchaser Title Objections. If Seller elects not to cure or fails to cure by the Closing Date, Purchaser shall have the option to proceed to Closing or to terminate this Agreement by providing Seller written notice on the earlier of the Closing Date or the date that is ten (10) Business Days from written notice from Seller. If Purchaser elects to proceed with the Closing, then effective as of the Closing Date the PPA Price shall be adjusted pursuant to the Power Purchase Agreement by the amount of the difference between the cost that Seller actually expended and the Purchaser Title Objections Cap, and such Purchaser Title Objections shall constitute Permitted Exceptions. If Purchaser elects to terminate this Agreement pursuant to this **Section 3.1(c)(iv)**, then this Agreement shall terminate, and Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement.

(d) Purchaser shall be entitled to request that the Title Company provide such affirmative insurance or such ALTA endorsements to each Title Policy as Purchaser may reasonably require, to the extent such affirmative insurance or ALTA endorsements are customarily and reasonably available in the applicable jurisdictions (the "Endorsements"), *provided* that (i) such Endorsements shall be at no cost to, and shall impose no additional Liability on, Seller, and (ii) Seller shall only be required to provide customary and reasonable representations, warranties and indemnification to the Title Company with respect to the Endorsements, *provided* Seller agrees to provide the Title Company the form of Owner's Affidavit attached hereto as **Exhibit K** sufficient to allow the Title Company to delete the exception for mechanics liens and other standard exceptions.

(e) Notwithstanding anything in this Agreement to the contrary, prior to or contemporaneously with the Closing, Seller shall be obligated to satisfy, discharge or cause to be released or removed from the applicable Title Commitment and/or Survey: (i) except for those encumbrances set forth in **Schedule 3.1(e)**, encumbrances that have been voluntarily recorded or otherwise placed or permitted to be placed by Seller against the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property on or following the Effective Date without Purchaser's prior written consent; and (ii) mortgages, deeds of trust, security instruments, financing statements, monetary encumbrances, or other instruments that evidence or secure indebtedness, judgments or Liens against the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property granted by Seller (collectively, the "Automatic Objections"). Automatic Objections shall automatically be deemed Purchaser Title Objections that Seller must cure, satisfy, discharge, or cause to be released prior to the Closing Date, and need not be included in any Title Objection Notice.

(f) After the Effective Date, Seller may, at Seller's sole cost and expense, deliver to Purchaser one or more changes to the terms and legal descriptions and location details of the Reserved Easements and Temporary Substation Easements, and **Exhibit C**, **Exhibit E-1** and **Exhibit O**, as applicable, shall be updated by mutual agreement of the Parties, as necessary.

(g) After the Closing Date, Seller may deliver to Purchaser one or more requested changes to the terms and legal descriptions and location details of the Reserved Easements and Temporary Substation Easements as reflected in the Deeds and Temporary Substation Easements executed and delivered by the Parties as of the Closing Date. Upon such request, the Parties shall work in good faith to reach mutual agreement on any such changes, such agreement not to be unreasonably withheld, conditioned or delayed by either Party. The Parties shall execute such Contracts as may be reasonably necessary to memorialize any such mutually agreed upon changes, including corrective deeds related to the Deeds in connection with the Reserved Easements or amendments to the Temporary Substation Easements, as applicable. If reasonably required by Purchaser, Purchaser shall in accordance with applicable Law and as Purchaser may otherwise reasonably deem necessary, give notice to or seek approval (in form and substance reasonably acceptable to Purchaser) from FERC for any such changes as a condition to executing any such Contracts, in which case, the Parties shall cooperate and work in good faith in accordance with **Section 7.12(m)** to give such notices or seek such approvals as soon as reasonably practicable.

ARTICLE 4

CONDITIONS PRECEDENT, CASUALTY DAMAGE, CONDEMNATION

Section 4.1. **Conditions Precedent Favoring Purchaser**. Purchaser's obligations under this Agreement are expressly subject to the timely fulfillment of the conditions set forth in this **Section 4.1** on or before the Closing, or such earlier date as is set forth below. Each condition may be waived, in whole or in part, only by written notice of such waiver from Purchaser to Seller:

(a) Seller shall have performed and complied with, in all material respects, the obligations required by this Agreement to be so performed or complied with by Seller prior to or at the Closing, and there shall have been delivered to Purchaser a certificate to such effect, dated as of the Closing Date, signed by Seller;

(b) The representations and warranties of Seller contained in **ARTICLE 5** shall be true and accurate on the Effective Date and as of the Closing Date (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date), except where such failure of such representations and warranties to be so true and correct (without giving effect to any limitations as to "materiality", "Material Adverse Effect" or other similar qualifiers set forth in any individual representation or warranty) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect, and there shall have been delivered to Purchaser a certificate to such effect, dated as of the Closing Date, signed by Seller;

(c) Since the Effective Date, there shall have been no Material Adverse Effect, nor shall any event or events have occurred, and no circumstances exist, that, individually or in the aggregate, with or without the lapse of time, would reasonably be expected to result in a Material Adverse Effect, and there shall have been delivered to Purchaser a certificate to such effect, dated as of the Closing Date, signed by Seller;

(d) Purchaser shall have executed the METC Interconnection Agreements, and each such METC Interconnection Agreement shall be in full force and effect as of the Closing;

(e) The Projects shall no longer be bound by the Consumers Umbrella GIA, and Seller shall have provided Purchaser evidence of the same;

(f) Seller shall have obtained a release in recordable form of the Project Assets from the Trust Indenture;

(g) Seller shall have executed (as applicable) and delivered, or caused to be delivered, to Purchaser the items set forth in **Section 8.2**, in form and substance reasonably satisfactory to Purchaser;

(h) No order, injunction, judgment, decree or ruling of any Governmental Authority shall be in effect which restrains, hinders or prohibits the consummation of the transactions contemplated by this Agreement and there shall not have been threatened in writing, nor shall there be pending, any Action by or before any Governmental Authority which is reasonably likely to restrain, hinder, prohibit, or challenge the validity of any of the transactions contemplated hereby or Purchaser's purchase of the Project Assets;

(i) No statute, rule or regulation shall have been enacted or proposed by a Governmental Authority which prohibits or restricts the consummation of the transactions contemplated by this Agreement or Purchaser's purchase of the Project Assets;

(j) The Required Regulatory Approvals, the HSR Approval, the FCC Approval and the Purchaser Regulatory Approvals shall have been duly obtained, made or given, and shall be in full force and effect;

(k) FERC shall have issued an order extending the May 6, 2026 mandatory commencement of construction date set forth in its order dated May 6, 2024 (187 FERC ¶ 62,082) to at least May 7, 2027, and such extension order shall be in full force and effect;

(l) The Seller Required Consents, except as otherwise provided on **Schedule 5.5**, shall have been duly obtained or made, and shall be in full force and effect;

(m) (i) With respect to the Material Environmental Permits and Material Permits set forth on **Part I** of **Schedule 5.13(c)** and **Part I** of **Schedule 5.14(a)**, respectively, which can be transferred to Purchaser or its applicable Subsidiary in accordance with applicable Law, the Parties shall have executed and delivered to the relevant Governmental Authority requests to transfer to Purchaser or such Subsidiary such Material Environmental Permits and Material Permits in accordance with **Part II** of **Schedule 5.13(c)** and **Part II** of **Schedule 5.14(a)**, respectively, and (ii) with respect to the Excluded Permits set forth on **Part I** of **Schedule 5.13(c)** and **Part I** of **Schedule 5.14(a)**, Purchaser or its applicable Subsidiary, shall have obtained such Excluded Permits, except to the extent the failure to obtain any such Excluded Permit does not materially affect Purchaser's, or its applicable Subsidiary's, ability to operate the Projects on and after the Closing Date;

(n) There shall have been no Casualty, or, in the event of one or more such Casualties in respect of which the aggregate amount of such Casualty Losses exceeds or is reasonably likely to exceed the Casualty/Condemnation Threshold (together with any Condemnation Losses), (i) Seller shall have fully corrected and repaired any and all such Casualties, at Seller's sole cost and expense, or (ii) the Parties in good faith shall have mutually agreed to the amount of the Casualty Losses and, effective as of the Closing Date, the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement, in each case, in accordance with **Section 4.3** and **Section 4.5**;

(o) There shall have been no Condemnation, or, in the event of one or more such Condemnations in respect of which the aggregate amount of such Condemnation Losses exceeds or is reasonably likely to exceed the Casualty/Condemnation Threshold (together with any Casualty Losses), the Parties in good faith shall have mutually agreed to the amount of the Condemnation Losses and, effective as of the Closing Date, the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement in accordance with **Section 4.4** and **Section 4.5**;

(p) The R&W Policy shall be in full force and effect, in form and substance reasonably acceptable to Purchaser;

(q) The PLLI shall have been issued, in form and substance reasonably acceptable to Purchaser;

(r) Title Company is irrevocably committed to issue to Purchaser the Title Policy (which may be shown by delivery by the Title Company of a proforma of the Title Policy), or, at Purchaser's request and cost for such additional premiums, such additional Endorsements to the Title Policy as Purchaser may request, and an extended ALTA owner's title insurance policy; *provided*, *however*, that any Endorsement requested by Purchaser, except those Endorsements to be obtained from the Title Company that Seller has expressly agreed to in Seller's Title Response, or issuance of an extended ALTA owner's title insurance policy at Closing, shall not be a condition precedent to Closing;

(s) Seller shall have cured all Automatic Objections;

(t) All Purchaser Title Objections shall have been addressed in accordance with **Section 3.1(c)(i)**;

(u) Seller shall have acquired and delivered to Purchaser the fee simple interest in those certain five residential properties downstream of the Rogers Project generally described and/or depicted on **Exhibit A-3** attached hereto (the "Residential Fee Simple Real Property") and such Residential Fee Simple Real Property shall be unoccupied; and

(v) Each Project shall have a registered CPNode with MISO, and each such CPNode shall have been transferred from Seller to Purchaser.

Section 4.2. Conditions Precedent Favoring Seller. Seller's obligations under this Agreement are expressly subject to the timely fulfillment of the conditions set forth in this **Section 4.2** on or before the Closing, or such earlier date as is set forth below. Each condition may be waived, in whole or part, only by written notice of such waiver from Seller to Purchaser:

(a) Purchaser shall have performed and complied with, in all material respects, the obligations required by this Agreement to be so performed or complied with by Purchaser prior to or at the Closing, and there shall have been delivered to Purchaser a certificate to such effect, dated as of the Closing Date, signed by Purchaser;

(b) The representations and warranties of Purchaser contained in **ARTICLE 6** shall be true and accurate on the Effective Date and as of the Closing Date (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date), except where such failure of such representations and warranties to be so true and correct (without giving effect to any limitations as to "materiality", "Material Adverse Effect" or other similar qualifiers set forth in any individual representation or warranty) would not reasonably be

expected, individually or in the aggregate, to have a Material Adverse Effect, and there shall have been delivered to Seller a certificate to such effect, dated as of the Closing Date, signed by Purchaser;

(c) Purchaser shall have executed (as applicable) and delivered, or caused to be delivered, to Seller the items set forth in **Section 8.3**, in form and substance reasonably satisfactory to Seller;

(d) No order, injunction, judgment, decree or ruling of any Governmental Authority shall be in effect which restrains, hinders or prohibits the consummation of the transactions contemplated by this Agreement and there shall not have been threatened in writing, nor shall there be pending, any Action by or before any Governmental Authority which is reasonably likely to restrain, hinder, prohibit or challenge the validity of any of the transactions contemplated hereby or Seller's sale of the Project Assets;

(e) No statute, rule or regulation of any Governmental Authority shall have been enacted or proposed which prohibits or restricts the consummation of the transactions contemplated by this Agreement or Seller's sale of the Project Assets;

(f) The Required Regulatory Approvals, the HSR Approval, the FCC Approval and the Purchaser Regulatory Approvals shall have been duly obtained, made or given, and shall be in full force and effect;

(g) The Purchaser Required Consents shall have been duly obtained or made, and shall be in full force and effect;

(h) Seller shall have received a Tax identification number with respect to all Reserved Easements;

(i) The R&W Policy shall be in full force and effect, in form and substance reasonably acceptable to Seller;

(j) Purchaser shall have provided to Seller confirmation that the PLLI have been bound and issued to Purchaser in accordance with the terms of **Section 7.11**, together with copies of paid invoices for all premiums and fees for such PLLI to be effective, and the PLLI shall be in full force and effect, in form and substance reasonably acceptable to Seller;

(k) Purchaser shall be bound by the terms of the Collective Bargaining Agreement to the Union Employees;

(l) Purchaser shall have caused all Target Employees to receive an offer of employment as set forth in **Section 7.6(a)**;

(m) Purchaser shall have entered into replacement Tower Leaseback Agreements in accordance with **Section 7.12(n)**, in form and substance reasonably acceptable to Purchaser; and

(n) Purchaser shall have delivered a certificate to Seller dated as of the Closing Date, signed by Purchaser and Hull Street Energy Partners III, L.P. certifying that the Equity Commitment Letter remains in full force and effect as of the Closing Date, such certificate to be in form and substance reasonably acceptable to Seller.

Section 4.3. Risk of Casualty.

(a) In the event of a Casualty, Seller shall promptly, but in no event later than fifteen (15) Business Days following such Casualty event, provide written notice (a "Casualty Notice") to Purchaser describing the particulars of such Casualty, including Seller's good faith estimate of the cost to repair such Casualty (as mutually agreed upon by the Parties in good faith, the "Casualty Loss").

(b) Subject to **Section 4.5**, in the event of a Casualty, Seller shall elect to either (i) repair such Casualty, at Seller's sole cost and expense, not to exceed the Casualty/Condemnation Cap, or (ii) adjust the PPA Price under the Power Purchase Agreement, subject to the Casualty/Condemnation Cap, to account for the aggregate Casualty Loss with respect to such Casualty, in which case Purchaser and Seller in good faith shall mutually agree upon the amount of the Casualty Loss and, effective as of the Closing Date, the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement, *provided*, *however*, any such adjustment shall not include any costs that Seller incurred to repair a Casualty, and Purchaser and Seller shall proceed with the Closing in accordance with this Agreement (subject to the satisfaction or waiver of the conditions precedent to the Closing) and the affected Project(s) and the affected Project Assets shall be sold by Seller to Purchaser in the then "AS-IS" condition of such Project(s) and Project Assets.

(c) If Seller elects to repair a Casualty pursuant to **Section 4.3(b)**, but Seller does not fully correct and repair such Casualty consistent with Prudent Utility Practices by the Outside Closing Date, then Purchaser may elect (i) to terminate this Agreement, in which event, subject to **Section 11.2**, Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement, or (ii) proceed with the Closing, in which case the Parties in good faith shall mutually agree on the remaining cost to repair such Casualty and, effective as of the Closing Date, the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement, and Purchaser shall accept the affected Project(s) and Project Assets in their then "AS-IS" condition upon the satisfaction or waiver of all other conditions precedent (taking into account the condition of such Project(s) and Project Assets due to such unrepaired Casualty).

Section 4.4. Risk of Condemnation.

(a) In the event of a Condemnation, Seller shall promptly, but in no event later than fifteen (15) Business Days following such Condemnation event, provide written notice (a "Condemnation Notice") to Purchaser describing the particulars of such Condemnation, including Seller's good faith estimate of the anticipated condemnation award and any increase to Purchaser's post-Closing obligations or liabilities resulting from, such Condemnation (as mutually agreed upon by the Parties in good faith, the "Condemnation Loss").

(b) Subject to **Section 4.5**, in the event of a Condemnation event, the Parties shall, pursuant to the terms set forth in the Power Purchase Agreement, adjust the PPA Price, not to exceed the Casualty/Condemnation Cap, to account for the aggregate Condemnation Loss with respect to such Condemnation, in which case Purchaser and Seller in good faith shall mutually agree to the amount of the Condemnation Loss and, effective as of the Closing Date, the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement and Purchaser and Seller shall proceed with the Closing in accordance with this Agreement (subject to the satisfaction or waiver of the conditions precedent to the Closing) and Purchaser shall accept the affected Project(s) and Project Assets in their then "AS-IS" condition upon the satisfaction or waiver of all other conditions precedent (taking into account the condition of such Project(s) and Project Assets due to such Condemnation).

Section 4.5. Limitation on Casualty and Condemnation Relief. Notwithstanding anything to the contrary in **Section 4.3** or **Section 4.4**:

(a) Seller shall not be obligated to repair a Casualty or adjust the PPA Price in accordance with **Section 4.3** or **Section 4.4** unless and until the aggregate amount of Casualty Losses and/or Condemnation Losses exceeds an amount equal to One Million Dollars ($1,000,000) (the "Casualty/Condemnation Threshold"); *provided*, that once the aggregate amount of Casualty Losses and Condemnation Losses exceeds One Million Dollars ($1,000,000), Seller shall be required to repair the Casualty or adjust the PPA Price in accordance with **Section 4.3** or **Section 4.4**, as applicable.

(b) In the event the aggregate amount of Casualty Losses and Condemnation Losses exceeds an amount equal to Twenty-Five Million Dollars ($25,000,000) (the "Casualty/Condemnation Cap"), Seller may terminate this Agreement, in which case, subject to **Section 11.2**, Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement, by providing written notice to Purchaser within twenty-five (25) Business Days following the Casualty or Condemnation for which such Casualty Loss or Condemnation Loss, as applicable, resulted in an excess of the Casualty/Condemnation Cap.

(c) If Seller elects to terminate this Agreement in accordance with **Section 4.5(b)**, within ten (10) Business Days of Seller's notice of such termination, Purchaser may elect, in its sole discretion, to proceed with the Closing in accordance with this Agreement (subject to the satisfaction or waiver of the conditions precedent to the Closing), in which case (i) the PPA Price shall be adjusted in accordance with **Section 4.3** or **Section 4.4** to account for the aggregate Casualty Losses and/or Condemnation Losses equal to the Casualty/Condemnation Cap, to the extent that Seller has not already incurred those Casualty Losses repairing a Casualty but in no event shall the aggregate amount of adjustments to the PPA Price pursuant to the Power Purchase Agreement be in excess of the Casualty/Condemnation Cap and (ii) Purchaser shall accept the affected Project(s) and Project Assets in their then "AS-IS" condition upon the satisfaction or waiver of all other conditions precedent (taking into account the condition of such Project(s) and Project Assets due to such Condemnation and/or unrepaired Casualty). If Purchaser elects not to proceed with Closing in accordance with this **Section 4.5(c)** or fails to provide Seller with notice of its election to proceed to Closing within ten (10) Business Days of Seller's notice of termination, this Agreement shall terminate in accordance with Seller's notice of termination, as set forth in **Section 4.5(b)**, in which case, subject to **Section 11.2**, Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the termination of this Agreement.

Section 4.6. Allocation of Condemnation Proceeds. If a Condemnation occurs after the Effective Date and this Agreement is not terminated as permitted pursuant to the terms of **Section 4.5(b)**, then this Agreement shall remain in full force and effect, Purchaser shall acquire the remainder of the Project Assets upon the terms and conditions set forth herein, and at the Closing:

(a) to the extent that such condemnation award has been paid to Seller prior to the Closing, Purchaser shall receive a credit at the Closing equal to the amount of any such award on account of such Condemnation, less any Seller-Allocated Amount (the "Condemnation Award Credit"); and

(b) to the extent that such condemnation award has not been paid to Seller prior to the Closing, Seller shall assign to Purchaser at the Closing the rights of Seller to, and Purchaser shall be entitled to receive and retain, such award; *provided*, within three (3) Business Days after receipt of such award, Purchaser shall pay to Seller an amount equal to the Seller-Allocated Amount of such award not previously paid to Seller. Purchaser's obligation to pay such amount to Seller shall expressly survive Closing.

ARTICLE 5

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller represents and warrants to Purchaser that, subject to such exceptions as are specifically disclosed in the Disclosure Schedules supplied by Seller to Purchaser and dated as of the Effective Date, all of the following are true and correct as of the Effective Date, except to the extent such representations and warranties are specifically made as of a particular date (in which case such representations and warranties are or will be true and correct as of such date):

Section 5.1. Organization, Authority, Validity and Non-Contravention.

(a) Seller is a Michigan corporation duly formed, validly existing and in good standing under the Laws of the State of Michigan. Seller has all requisite corporate power and authority to carry on its business as it is currently conducted and to own, lease and operate its assets and properties where such assets and properties are now owned, leased or operated.

(b) Seller has all requisite corporate power and authority to enter into this Agreement and the Ancillary Agreements to which Seller is a party, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by Seller of this Agreement and the Ancillary Agreements to which Seller is a party, and the performance by Seller of its obligations hereunder and thereunder have been duly and validly authorized by all necessary corporate action.

(c) This Agreement has been duly executed and delivered by Seller and constitutes the valid, legal and binding obligation of Seller, enforceable against Seller in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles. Upon execution and delivery of the Ancillary Agreements to which Seller is a party, each of such Ancillary Agreements will constitute the legal, valid and binding obligation of Seller, enforceable against Seller in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles.

Section 5.2. Solvency. No petition or notice has been presented, no order has been made and no resolution has been passed for the bankruptcy, liquidation, winding-up or dissolution of Seller. No receiver, trustee, custodian or similar fiduciary has been appointed over the whole or any part of Seller's assets or the income of Seller. Seller has no plan or intention of, nor has Seller received any written notice that any other Person has any plan or intention of, filing, making or obtaining any such petition, notice, order or resolution or of seeking the appointment of a receiver, trustee, custodian or similar fiduciary.

Section 5.3. Litigation.

(a) Except as set forth on **Schedule 5.3(a)**, there is no Action outstanding or pending or, to Seller's Knowledge, threatened, in each case, by Seller or against Seller relating to or affecting the Projects or Project Assets, except, in each case, for any Actions before the MPSC or FERC which (i) are outstanding or pending or, to Seller's Knowledge, threatened by Seller or against Seller, and not related to or affecting solely the Projects or Project Assets, and (ii) which do not (A) restrain, enjoin, or otherwise prohibit or make illegal the consummation of the transactions contemplated by this Agreement, including the sale of the Project Assets or (B) materially and adversely affects the use or operation of the Projects

or the Project Assets consistent with past practice during the Lookback Period, taken as a whole. During the Lookback Period, to Seller's Knowledge, Seller has not incurred any Liabilities to any Person for personal injury, property damage or tort arising out of or related to the Project or the Project Assets.

(b) Seller has not received during the Lookback Period notice of any Order entered against Seller, any Project or any Project Asset which: (i) imposes restrictions on the Project or Project Assets or Seller as it relates to the Project and Project Assets that (A) materially and adversely affects the use or operation of the Projects or the Project Assets consistent with past practice during the Lookback Period, or (B) restrains, enjoins, or otherwise prohibits or makes illegal the consummation of the transactions contemplated by this Agreement, including the sale of the Project Assets; (ii) requires Seller to obtain any consent, authorization, approval or declaration from, or to make any filing, registration with or other notices to, any Governmental Authority (other than the Required Regulatory Approvals, the HSR Approval, the FCC Approval and the Seller Required Consents) in connection with the consummation of the transactions contemplated by this Agreement; or (iii) materially and adversely affects the use or operation of the Projects or the Project Assets consistent with past practice during the Lookback Period, taken as a whole. Seller has not received during the Lookback Period notice of any Order entered against (x) Seller (solely in respect of one or more Projects) or (y) one or more Projects, in each case, which imposes, or would reasonably be expected to impose, any material liability on Purchaser or any of its Subsidiaries following the Closing as the applicable owner of the Project Assets.

Section 5.4. **No Conflicts**. Assuming all of the Required Regulatory Approvals, the HSR Approval, the FCC Approval and the Seller Required Consents have been obtained, the execution and delivery by Seller of and the performance by Seller of its obligations under, this Agreement and the Ancillary Agreements to which it is a party, does not and the consummation of the transactions contemplated hereby and thereby will not:

(a) conflict with or result in a breach of, or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under), the organizational documents of Seller;

(b) conflict with or result in a breach of or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under) or give rise to a right of termination, cancellation, modification or acceleration of any obligation, to any put or call or similar rights, or to loss of a benefit, in each case, under any Material Contract or Material Permit to which Seller is a party or by which the Project Assets are bound;

(c) conflict with or result in a violation or breach, in each case, in any material respect of any applicable Law; or

(d) result in the creation or imposition of any Lien on any of the Project Assets.

Section 5.5. **Seller Third Party Consents**. **Schedule 5.5** sets forth a true, correct and complete list of all consents, approvals, authorizations, waivers, licenses, registrations, declarations, qualifications, filings or notices of or to Persons, including Governmental Authorities, other than the Required Regulatory Approvals, the HSR Approval and the FCC Approval, that are required in connection with the execution and delivery by Seller of this Agreement or any of the Ancillary Agreements to which Seller is a party, the performance of the obligations of Seller hereunder or thereunder, or the consummation by Seller of the transactions contemplated hereby and thereby (including the sale of all Project Assets to Purchaser) (the "Seller Required Consents"). As of the Closing Date, except as otherwise provided on **Schedule 5.5**, all such Seller Required Consents are in full force and effect and do not impose on Purchaser any additional term, condition, restriction or Liability other than Purchaser's

obligation to assume and comply with the terms, conditions, restrictions and Liabilities in the Project Contracts and Project Permits following the Closing.

Section 5.6. Title to Project Assets.

(a) Except as set forth on **Part I** of **Schedule 5.6(a)**, Seller owns, leases, or licenses from third parties or otherwise has the right to use all Tangible Personal Property necessary to operate the Projects as operated consistent with past practice during the Lookback Period, and has good, valid and marketable title to the Tangible Personal Property, free and clear of all Liens other than Permitted Exceptions, except as where the failure to do so would not, individually or in the aggregate, be material and adverse to (i) the use or operation of the Projects or the Project Assets taken as a whole and consistent with past practice during the Lookback Period, or (ii) the consummation of the transactions contemplated by this Agreement. Except as set forth in **Part II** of **Schedule 5.6(a)**, all items of material Tangible Personal Property (x) have been maintained in all material respects in accordance with Prudent Utility Practice, (y) are in good operating condition and repair, reasonable wear and tear excepted, and (z) are suitable for the purposes for which they are presently used.

(b) As of the Effective Date, to Seller's Knowledge, with respect to Fee Simple Real Property for which Seller has not received a Title Commitment, and except as otherwise shown in the applicable Title Commitment, with respect to Fee Simple Real Property for which Seller has received a Title Commitment, (i) Seller holds good and valid title to the Fee Simple Real Property, and (ii) Seller holds good and valid leasehold or other real property interest, as applicable, pursuant to the Real Property Agreements, in the case of **clauses (i)** and **(ii)**, free and clear of all Liens other than Permitted Exceptions. As of the Closing, except as set forth in the applicable Title Policy, (x) Seller holds good and valid title to the Fee Simple Real Property, and (y) Seller holds good and valid leasehold or other real property interest, as applicable, pursuant to the Real Property Agreements, in the case of **clauses (x)** and **(y)**, free and clear of all Liens other than Permitted Exceptions.

(c) Except as set forth on **Schedule 5.6(c)**, during the Lookback Period, Seller has not received any written notice from a Governmental Authority of any pending condemnation, taking or eminent domain proceedings against any part of the Project Assets.

(d) Except as set forth on **Schedule 5.6(d)**, the Project Assets and the Consumers Umbrella GIA constitute all of the material assets, properties, and rights, tangible and intangible, of any nature whatsoever, used by Seller for the use and operation of the Projects consistent with past practice during the Lookback Period.

(e) Each FERC License is in full force and effect and has not been appealed, terminated or revoked. Except as set forth on **Schedule 5.6(e)**, Seller and the Projects are in compliance with the FERC Licenses in all material respects and Seller has not received any written notification from FERC under Section 31 of the Federal Power Act that Seller or any of the Projects are in material violation of the FERC Licenses.

Section 5.7. Real Property Interests.

(a) Other than the Real Property Agreements, and as set forth in **Schedule 5.7(a)** or as set forth in the applicable Title Commitment, there are no leases, tenancies, subleases, licenses, occupancies, co-tenancies, or other rights of possession or control held by or entered into by Seller in effect, oral or written, related to, associated with, concerning, or affecting the Projects or the Project Assets. Seller has Made Available to Purchaser true, complete and correct copies of the Leases (other than the Flowage Easements) (and any material amendments thereto).

(b) All of the Fee Simple Real Property applicable to each Project is all of the real property in fee owned by Seller and used by Seller in the operation of such Project consistent with past practice during the Lookback Period.

Section 5.8. Reserved.

Section 5.9. Tax Matters.

(a) Seller has filed all Tax Returns that were required to file under applicable Laws and regulations with any Governmental Authority relating to the Project Assets, including the ownership and operation thereof, and all such Tax Returns are true, complete and accurate in all material respects and were prepared in compliance with all applicable Laws. All Taxes due and owing by Seller with respect to the Project Assets, whether or not shown on any Tax Return or assessed by any Governmental Authority, have been timely paid in full.

(b) With respect to the Projects and Project Assets, Seller, and each Affiliate of Seller, have withheld and timely paid to the appropriate Governmental Authority all Taxes (including all sales and use Taxes) required to have been withheld and paid in connection with any amounts paid or owing to any employee, independent contractor, creditor, member, vendor, supplier or other third party. With respect to the Projects and Project Assets, Seller has retained all required Tax exemption certificates and other documentation in respect of payments that are exempt from such Taxes.

(c) No extension or waiver of the limitation period applicable to any Tax Return required to be filed with respect to any Project Asset, or applicable to the payment of any Tax by, or assessment of any Tax against or with respect to, any Project Asset, has been granted, and no such extension or waiver has been requested by or on behalf of Seller.

(d) There are no Liens for Taxes upon any of the Project Assets, including those related to, associated with or concerning the Projects other than Liens for Taxes not yet due or delinquent.

(e) The transactions contemplated by this Agreement will not have an adverse effect on the continuing validity and effectiveness of any Tax exemption, Tax holiday, Tax credit, Tax incentive or similar arrangement or benefit for which Seller has applied for with respect to any of the Project Assets in the Post-Closing Tax Period.

(f) Seller has not received (i) any written notice of any special assessments, levies or Taxes imposed or to be imposed affecting any of the Project Assets, or (ii) any notice of any action regarding the potential formation of any other Governmental Authority empowered to so assess a Tax or levy on the Project Assets. To Seller's Knowledge, no such special assessments, levies or Taxes with respect to the Project Assets have been threatened by any Governmental Authority. The Fee Simple Real Property has not been, nor will it be after Closing, subject to any rollback Taxes.

(g) Except as set forth on **Schedule 5.9(g)**, no dispute, claim, audit or other proceeding by any Governmental Authority is pending or, to Seller's Knowledge, threatened with respect to any Taxes due from or with respect to Seller and the Project Assets. With respect to the Project Assets, no claim has ever been made by a Governmental Authority in a jurisdiction where Seller does not file Tax Returns that Seller is or may be subject to or responsible for the payment of any Tax to that jurisdiction. With respect to the Project Assets, all Tax deficiencies asserted, or assessments made, against Seller as a result of any examinations by any Governmental Authority have been fully paid.

(h) As of the Closing, none of the Project Assets: (i) constitute "tax-exempt bond financed property" or "tax-exempt use property" within the meaning of Code Section 168, (ii) is subject to a lease, safe harbor lease or other arrangement as a result of which such assets are required for federal Income Tax purposes to be treated as owned by a Person other than Seller, (iii) are subject to a "section 467 rental agreement" within the meaning of Section 467(d) of the Code, (iv) are subject to the limitations on "Section 197(f)(9) intangibles" described in Section 197(f)(9) of the Code or any similar law, (v) include any contract or other arrangement (whether oral or written) that is treated (or could be treated) as a "partnership" for federal Income Tax purposes, or (vi) will obligate Purchaser to indemnify, or to make payments to or on behalf of, Seller or any other Person, with respect to Taxes.

(i) Seller is not a "foreign person" as defined in Section 1445(f)(3) of the Code.

(j) With respect to the Projects and Project Assets, Seller is in material compliance with all escheat or unclaimed property Laws, and Seller has no material Liability to pay over any amount to any Governmental Authority any cash or other property under escheat or unclaimed property Laws.

(k) With respect to the Projects and Project Assets, all Taxes required to have been collected and paid on the sale of products or taxable services by Seller (whether or not denominated as sales or use Taxes) have been properly and timely collected and paid, or all sales Tax exemption certificates or other proof of the exempt nature of sales of all products or services have been properly collected and, if required, submitted to the appropriate Governmental Authority.

(l) **Schedule 5.9(l)** lists all states, territories and other jurisdictions (whether foreign or domestic) in which Seller files Tax Returns with respect to the Projects or the Project Assets.

(m) The representations and warranties set forth in this **Section 5.9** are Seller's sole and exclusive representations and warranties regarding Tax matters and cannot be relied upon with respect to Taxes attributable to any Tax period (or portions thereof) beginning after the Closing Date.

Section 5.10. Material Contracts.

(a) **Schedule 5.10(a)** contains a true, complete and correct list of all Material Contracts.

(b) Each Material Contract has been duly authorized and executed by Seller, is in full force and effect, and constitutes a legal, valid, binding and enforceable agreement as to Seller and, except as set forth in **Schedule 5.10(b)**, to Seller's Knowledge, the respective counterparties thereto, and will not be rendered invalid or unenforceable as a result of the transactions contemplated hereby, except, in each case, as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles.

(c) Except as set forth on **Part I** of **Schedule 5.10(c)**, neither Seller, nor to Seller's Knowledge, any other Person party to any Material Contract (i) is in breach of or in default under any Material Contract, (ii) has indicated in writing during the Lookback Period its intention to amend or terminate any Material Contract, or (iii) has made during the Lookback Period any written claims against or sought any indemnification as to any matter arising under or with respect to any Material Contract. Except as set forth on **Part II** of **Schedule 5.10(c)**, to Seller's Knowledge, no event has occurred during the Lookback Period which with the passage of time or giving of notice or both would constitute such a default, result in a loss of rights or permit termination, modification or acceleration under, or result in the creation of any Lien on the Project Assets under any Material Contract. Seller has not received, nor has

Seller delivered during the Lookback Period, a written notice declaring a default under any of the Material Contracts (which has not otherwise been cured).

(d) Except as set forth on **Schedule 5.10(d)**, during the Lookback Period, Seller has timely paid in full all amounts due and payable by Seller pursuant to any Material Contract.

(e) Seller has Made Available to Purchaser true, correct and complete copies of all Material Contracts (other than the Flowage Easements) and any amendments, assignments, supplements or other modifications thereto.

(f) Except as set forth on **Schedule 5.10(f)**, Seller has not sold or transferred, agreed or committed to sell or transfer, or granted any options or rights, in each case, to third parties (other than Seller's retail and wholesale customers) to purchase electric power produced from the Projects after the Closing Date.

(g) Excluding (i) the Material Contracts, (ii) the Real Property Agreements, (iii) the Project Contracts with the applicable suppliers and vendors that are directly related to any Material Contract and that were entered into on terms substantially similar to the standard forms provided to Purchaser, and (iv) the Project Contracts related to the operation and maintenance of the Project Assets, the remaining Project Contracts, in the aggregate, are not reasonably expected to involve or otherwise give rise to payments or expenditures in excess of Six Million Five Hundred Thousand Dollars ($6,500,000) on an annual basis.

Section 5.11. Brokers. Except as set forth on **Schedule 5.11**, Seller has no Liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement or any of the Ancillary Agreements, including any such Liability for which Purchaser or any of its Affiliates would become liable or obligated based upon arrangements made by Seller.

Section 5.12. Legal Compliance.

(a) Except as set forth on **Schedule 5.12(a)**, Seller has complied during the Lookback Period and is now in compliance, in each case, in all material respects with all applicable Laws (including data privacy Laws) (other than Environmental Laws, which are addressed in **Section 5.13**, and Employment Laws, which are addressed in **Section 5.16**), with respect to the Projects and the Project Assets.

(b) Except as set forth on **Schedule 5.12(b)**, Seller has not received during the Lookback Period written notice of a violation of, or non-compliance with any applicable Laws (other than Environmental Laws, which are addressed in **Section 5.13**, and Employment Laws, which are addressed in **Section 5.16**) relating to the Projects, the Project Assets or the transactions contemplated by this Agreement, and to Seller's Knowledge, no event has occurred and there are no facts, conditions or circumstances that exist that would reasonably be expected (with or without notice or lapse of time, or both) to give rise to any such notification.

Section 5.13. Environmental Compliance.

(a) Except as set forth on **Schedule 5.13(a)**, the Projects and Project Assets are in compliance in all material respects with all Environmental Laws, and have been in compliance in all material respects with all Environmental Laws during the Lookback Period.

(b) Except as set forth on **Schedule 5.13(b)**, Seller has not received any written notice, the subject of which remains outstanding, from any Governmental Authority regarding alleged material violation of, or non-compliance with, any applicable Environmental Law in connection with the use or operation of the Projects or any actual, threatened, or alleged Release of Hazardous Materials at or from (or otherwise affecting) the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property.

(c) **Part I** of **Schedule 5.13(c)** sets forth all material Environmental Permits required in connection with the use or operation of the Project and the Project Assets consistent with past practice during the Lookback Period (the "Material Environmental Permits") which Seller will apply to transfer to Purchaser in accordance with **Part II** of **Schedule 5.13(c)**. All Material Environmental Permits required to be held by Seller have been obtained by it and are valid in full force and effect other than such Material Environmental Permits which have expired in accordance with their terms and are no longer required in connection with the use or operation of the Project and the Project Assets consistent with past practice during the Lookback Period, and to Seller's Knowledge have not been appealed, terminated, or revoked. During the Lookback Period, (i) Seller has operated the Projects and the Project Assets in compliance in all material respects with the Material Environmental Permits, and (ii) Seller has not received written notice of any pending or prior challenge or appeal to any Material Environmental Permits. Seller has Made Available to Purchaser a true, correct and complete copy of each Material Environmental Permit issued and in effect as of the Effective Date.

(d) To Seller's Knowledge, none of the Projects have disposed of or offered for disposal any Hazardous Material except in compliance in all material respects with, and in a manner not likely to give rise to Liability under, Environmental Laws, in each case, during the Lookback Period. To Seller's Knowledge, there is no Action outstanding or pending or threatened, by or against Seller or the Projects or Project Assets pursuant to any material Environmental Law, including the Release of Hazardous Materials at or from (or otherwise affecting) the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property by any Governmental Authority or any other Person, that is reasonably likely to materially and adversely affect the use or operation of the Projects or the Project Assets, consistent with past practice during the Lookback Period, taken as a whole.

(e) To Seller's Knowledge, Seller has Made Available to Purchaser all material non-privileged environmental reports, studies, assessments, regulated material surveys, and other similar documents that have been formally prepared, reviewed, and approved for internal and external distribution which are in Seller's possession or control (including related sampling data) relating to (i) any actual, threatened, or alleged material Releases of Hazardous Materials in, at or migrating from or under the Projects, or (ii) any Project's material non-compliance with Environmental Laws, in each case, during the Lookback Period.

(f) Except for that certain Quitclaim Deed, dated as of February 12, 1982, by and between Consumers Power Company and the State of Michigan, Department of Natural Resources and as disclosed in the Title Commitments, Seller has not entered into any agreement with respect to the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property pursuant to which Seller has assumed any material Liability under Environmental Laws of any third party.

(g) The representations and warranties set forth in this **Section 5.13** are Seller's sole and exclusive representations and warranties regarding Environmental matters.

Section 5.14. Permits.

(a) **Part I** of **Schedule 5.14(a)** sets forth all material Permits (other than Environmental Permits) required in connection with the use or operation of the Projects and the Project Assets consistent with past practice during the Lookback Period, including any Permits required in connection with any work being performed in connection with reconstruction activities (the "Material Permits") which Seller will apply to transfer to Purchaser in accordance with **Part II** of **Schedule 5.14(a)**. All Material Permits required to be held by Seller have been obtained by it and are valid and in full force and effect other than such Material Permits which have expired in accordance with their terms and are no longer required in connection with the use or operation of the Project and the Project Assets consistent with past practice during the Lookback Period, and, to Seller's Knowledge, have not been appealed, terminated, or revoked. Except as set forth in **Part III** of **Schedule 5.14(a)**, Seller is in compliance in all material respects with the Material Permits and during the Lookback Period, has not received any written notification from any Governmental Authority that Seller or any of the Projects or the Project Assets are in violation in any material respect of any such Material Permits.

(b) Seller has Made Available to Purchaser a true, complete and correct copy of each Material Permit issued and in effect as of the Effective Date.

Section 5.15. Insurance. Seller currently maintains insurance with respect to the Project Assets in a manner consistent with its past practice (the "Insurance Policies"). The Insurance Policies are in full force and effect. There are no pending claims under any Insurance Policies relating to the Project Assets. Seller has not received during the Lookback Period (a) any written notice from any insurer of a denial of coverage under any of the Insurance Policies relating to the Project Assets, or (b) any written notice of cancellation or termination of the Insurance Policies. All premiums with respect to the Insurance Policies have been paid in full.

Section 5.16. Employment Matters.

(a) Non-Union Employees. **Part I** of **Schedule 5.16(a)** sets forth a correct and complete list of all Non-Union Employees providing services to the Projects (including all Non-Union Employees on medical or other leave) as of the Effective Date, showing for each as of the Effective Date the Non-Union Employee's name, job title or description, initial date of employment, status (part-time, full-time, exempt, non-exempt, etc.), employing entity, salary or wage level (including a summary description of any bonus or deferred compensation arrangements other than any such arrangements under which payments are discretionary), and also showing any bonus, commission or other remuneration other than salary paid, accrued vacation and/or paid time off, and any bookkeeping account balances for reimbursable benefits (including flexible spending account balances, lifestyle spending account balances and commuter expense account balances) during the year ending December 31, 2025. Seller has provided all individual Contracts between Seller and any Non-Union Employee identified on **Part I** of **Schedule 5.16(a)**. Except as set forth in **Part II** of **Schedule 5.16(a)**, to Seller's Knowledge, with respect to the Non-Union Employees providing services to the Projects, currently and during the Lookback Period:

(i) there are and have been no bargaining relationships or other Contracts or understandings with any labor organization applicable to the Non-Union Employees;

(ii) there are and have been no organizational campaigns, petitions or other formal unionization efforts made or threatened by or on behalf of any labor union;

(iii) there is and has been no worker's compensation liability, experience or matter outside the ordinary course of business;

(iv) there are and have been no strikes, slowdowns, work stoppages, lockouts, concerted refusals by a group to perform their duties, or other labor disputes pending or threatened against or involving Seller;

(v) Seller has not committed any unfair labor practices within the meaning of the NLRA;

(vi) Seller has not implemented any layoffs of employees that violated the WARN Act;

(vii) there are and have been no Actions against Seller pending or threatened to be brought or filed by, with or in any court in any jurisdiction or Governmental Authority regarding Employment Laws and involving any Non-Union Employee;

(viii) Seller is and has been in compliance in all material respects with all applicable Employment Laws;

(ix) no Non-Union Employee is or has been in material violation of any term of any employment agreement, nondisclosure agreement, common law nondisclosure obligation, fiduciary duty, noncompetition agreement, non-solicitation agreement, restrictive covenant agreement or other obligation owed to Seller; or owed to any third party;

(x) Purchaser will not be subject to any claim or liability for any severance pay due or owed as a result of the consummation of the transactions contemplated by this Agreement as long as Purchaser fulfills its obligations under the terms of this Agreement; and

(xi) Seller is and has been in compliance in all material respects with all applicable Laws related to data privacy applicable to Non-Union Employees, and Seller has implemented and maintained reasonable security measures to protect all such employee information subject to protection under data privacy laws from unauthorized access, maintenance, use, or disclosure.

(b) Union Employees. **Part I** of **Schedule 5.16(b)** sets forth a correct and complete list of all Union Employees providing services to the Projects (including all Union Employees on medical or other leave) as of the Effective Date, showing for each as of the Effective Date the Union Employee's name, job title or description, initial date of employment, status (part-time, full-time, exempt, non-exempt, etc.), employing entity, salary or wage level (including a summary description of any bonus or deferred compensation arrangements other than any such arrangements under which payments are discretionary), and also showing any bonus, commission or other remuneration other than salary paid, accrued vacation and/or paid time off, and any bookkeeping account balances for reimbursable benefits (including flexible spending account balances, lifestyle spending account balances and commuter expense account balances) during the year ending December 31, 2025. Except as set forth in **Part II** of **Schedule 5.16(b)**, to Seller's Knowledge, with respect to the Union Employees providing services to the Projects currently and during the Lookback Period:

(i) there are no operative collective agreements or bargaining relationships or other Contracts or understandings with any other labor organization besides the Collective Bargaining Agreement with the Union;

(ii) there is and has been no worker's compensation liability, experience or matter outside the ordinary course of business;

(iii) Seller has not implemented any layoffs of employees that violated the WARN Act;

(iv) Seller is and has been in compliance in all material respects with all applicable Employment Laws;

(v) there are no pending, or threatened claims, grievances, or disputes involving Union Employees or the incumbent Union, including pending arbitration matters;

(vi) Seller is and has been in compliance in all material respects with all applicable Laws related to data privacy applicable to Union Employees, and Seller has implemented and maintained reasonable security measures to protect all employee information subject to protection under data privacy laws from unauthorized access, maintenance, use, or disclosure;

(vii) all Union dues required to be collected or withheld by the Collective Bargaining Agreement are and have been properly withheld, remitted to the authorized bargaining agent, and credited to the correct employees, and there are no disputes regarding Union membership or dues;

(viii) all employment agreements affecting or relating to Union Employees requested by Purchaser, including employment letters or correspondence related thereto outlining or relating to the employment of specific individual employees, confidentiality agreements, non-competition agreements, non-solicitation agreements, and other restrictive covenant agreements have been provided to Purchaser;

(ix) all Union Employees subject to transfer have accurately been identified in **Part I** of **Schedule 5.16(b)**;

(x) complete and accurate information regarding all Union or Union-related compensation, health, welfare, and other employee benefit plans, has been provided to Purchaser;

(xi) there are and have been no strikes, work stoppages, slowdowns, lockouts, concerted refusals by a group to perform their duties, or other material employee or labor disputes currently pending or threatened against or involving Seller;

(xii) Seller has not committed any material unfair labor practices within the meaning of the NLRA;

(xiii) there are and have been no Actions against Seller pending or threatened to be brought or filed by, with, or in any court in any jurisdiction or Governmental Authority regarding Employment Laws and involving any Union Employee; and

(xiv) unless otherwise provided in the Collective Bargaining Agreement, Purchaser shall not be subject to any claim or liability for any severance pay that may be due or owed because of the consummation of the transactions contemplated by this Agreement as long as Purchaser fulfills its obligations hereunder.

(c) With respect to both Union Employees and Non-Union Employees, Seller has delivered to Purchaser true, correct and complete summaries of all (i) material workers' compensation or equivalent claims which are pending or have go-forward obligations, (ii) material charges, grievances, complaints or notices of violation filed with, or otherwise made by, the Occupational Safety and Health Administration or a state occupational safety and health agency, or any equivalent authority in locations outside the United States, which are pending or have go-forward obligations, and (iii) material outstanding employment-related claims against Seller or any Affiliate before or by a Governmental Authority and employment-related claims against Seller or any Affiliate before or by a Governmental Authority concluded or settled in the Lookback Period.

Section 5.17. Employee Benefit Matters.

(a) **Part I** of **Schedule 5.17(a)** contains a true and complete list of each of Seller's pension, benefit, retirement, savings, compensation, profit-sharing, deferred compensation, incentive, bonus, performance award, phantom equity, stock or stock-based, change in control, retention, severance, vacation, paid time off ("PTO"), medical, vision, dental, disability, welfare, Code Section 125 cafeteria, material fringe-benefit and other similar agreement, plan, policy, program or arrangement (and any amendments thereto), including any employment or other service provider agreement that cannot be terminated at-will without further liability, in each case, whether or not reduced to writing and whether funded or unfunded, including each "employee benefit plan" within the meaning of Section 3(3) of ERISA, whether or not Tax-qualified and whether or not subject to ERISA, which is maintained, sponsored, contributed to, or required to be contributed to by Seller or any ERISA Affiliate for the benefit of any Target Employees, or with respect to which Purchaser or any of its Affiliates would reasonably be expected to have any material Liability, contingent or otherwise (as listed on **Part I** of **Schedule 5.17(a)** each, an "Employee Benefit Plan"). No Employee Benefit Plan is subject to any laws outside of the United States. Except as described on **Part II** of **Schedule 5.17(a)**, with respect to the Employee Benefit Plans, Seller hereby represents and warrants:

(i) With respect to each Employee Benefit Plan, Seller has Made Available to Purchaser, to the extent reasonably requested by Purchaser and to the extent applicable and existing, copies of the current (A) plan document, together with any amendments, *provided* that if, for any given Employee Benefit Plan, no document exists that contains the material terms of such Employee Benefit Plan, Seller has Made Available to Purchaser a written summary of material plan terms prior to Effective Date; (B) summary plan description and any summaries of material modification thereof; (C) the most recent Internal Revenue Service determination letter, advisory opinion or opinion letter (if the Employee Benefit Plan is intended to be qualified within the meaning of Section 401(a) of the Code); and (D) all trust agreements, insurance Contracts and other documents relating to the funding or payment of benefits under any Employee Benefit Plan.

(ii) Each Employee Benefit Plan that is intended to be qualified within the meaning of Section 401(a) of the Code has received a favorable determination letter from the Internal Revenue Service, or with respect to a prototype or volume submitter plan, can rely on an opinion letter from the Internal Revenue Service to the prototype plan or volume submitter plan sponsor, to the effect that such Employee Benefit Plan is so qualified. No

event has occurred that could reasonably be expected to give rise to disqualification of any such Employee Benefit Plan under Section 401(a) of the Code.

(iii) Each Employee Benefit Plan has been established, administered and maintained in accordance with its terms and in compliance with all applicable Employment Laws (including ERISA and the Code) in all material respects. Nothing has occurred with respect to any Employee Benefit Plan that has subjected or could reasonably be expected to subject Seller or any of its ERISA Affiliates or, with respect to any period on or after the Closing Date, Purchaser or any of its Affiliates, to a material penalty under Section 502 of ERISA or to a material Tax or penalty under Sections 4975, 4980B or 4980H of the Code. With respect to the Employee Benefit Plans, all required contributions to, and premiums or other payments on account of, each Employee Benefit Plan have been made in all material respects in full on a timely basis, or properly accrued.

(iv) **Schedule 5.17(a)(iv)** lists each Employee Benefit Plan that is subject to Title IV of ERISA. Neither Seller nor any of its ERISA Affiliates has during the six (6) years prior to the Effective Date: (A) failed to timely pay premiums to the Pension Benefit Guaranty Corporation; (B) withdrawn from any Employee Benefit Plan; (C) incurred Taxes under Section 4971 of the Code with respect to any pension plan that is not a Multiemployer Plan; (D) participated in a Multiemployer Plan; (E) sponsored, maintained or participated in a multiple employer welfare arrangement (as defined in Section 3(40) of ERISA); or (F) except as provided in **Schedule 5.17(a)(iv)**, sponsored, maintained or participated in any "pension plan" (as defined in Section 3(2) of ERISA) that is or was subject to Sections 412 or 430 of the Code or Title IV of ERISA.

(v) Other than as required under COBRA or other applicable Law, and as listed in **Schedule 5.17(a)(v)**, (A) no Employee Benefit Plan or other arrangement provides post-termination or retiree health benefits to any individual for any reason, and (B) neither Seller nor any of its ERISA Affiliates has any material liability to provide post-termination or retiree health benefits to any Target Employee.

(vi) There is no pending or, to Seller's Knowledge, threatened action, claim, suit, litigation or other proceeding relating to an Employee Benefit Plan (other than routine claims for benefits), and no Employee Benefit Plan has within the three (3) years prior to the date hereof been the subject of an examination or audit by a Governmental Authority or the subject of an application or filing under a voluntary compliance or similar program sponsored by any Governmental Authority.

(vii) Each Employee Benefit Plan that is subject to Section 409A of the Code has been administered in material compliance with its terms and the operational and documentary requirements of Section 409A of the Code and all applicable regulatory guidance (including, notices, rulings and proposed and final regulations) thereunder. Seller does not have any obligation to gross up, indemnify or otherwise reimburse any Target Employee for any excise Taxes, interest or penalties incurred pursuant to Section 409A or 4999 of the Code.

(viii) Each Employee Benefit Plan that is a "group health plan" within the meaning of Section 5000(b)(1) of the Code is in compliance with the applicable requirements of (i) the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, including the market reform mandates and the information reporting rules and (ii) COBRA and the regulations

promulgated thereunder. Seller has offered minimum essential health coverage, satisfying affordability and minimum value requirements, to its full-time employees sufficient to avoid liability for assessable payments under Sections 4980H(a) and 4980H(b) of the Code. Seller has complied with the applicable reporting requirements under Sections 6055 and 6056 of the Code.

(ix) Except as set forth in **Schedule 5.17(a)(ix)**, neither the execution and delivery of this Agreement by Seller nor the consummation of the transactions contemplated hereby will: (A) entitle any Transferred Employee to severance pay, unemployment compensation, benefits, incentive compensation, or any similar payment; (B) accelerate the time of payment or vesting or increase the amount of any compensation due to any such Transferred Employee; (C) require any contributions or payments to fund any obligations under any Employee Benefit Plan; or (D) directly or indirectly result in any payment made to or on behalf of any Transferred Employee to constitute a "parachute payment" within the meaning of Section 280G of the Code; and the Seller does not have any obligation to "gross up" any Person for any Taxes under Section 4999 of the Code.

Section 5.18. Anti-Money Laundering and Anti-Terrorism Laws. Neither Seller nor, to Seller's Knowledge, any of its subsidiaries or its parent company, is in violation of the Anti-Money Laundering and Anti-Terrorism Laws. Neither Seller nor, to Seller's Knowledge, any of its Affiliates, is acting, directly or indirectly, on behalf of terrorists, terrorist organizations or narcotics traffickers, including those persons or entities that appear on the Annex to Executive Order No. 13224, or are included on any relevant lists maintained by the Office of Foreign Assets Control of U.S. Department of Treasury, U.S. Department of State, or other U.S. Governmental Authorities, the United Nations Security Council, The European Union or any European Union Member State, all as may be amended from time to time. Neither Seller nor, to Seller's Knowledge, any of its Affiliates or subsidiaries or its parent company, or without inquiry, any of its brokers or other agents, in any capacity in connection with the sale of the Project Assets (A) conducts any business or engages in making or receiving any contribution of funds, goods or services to or for the benefit of any person included in the lists referenced above, (B) deals in, or otherwise engages in any transaction relating to, any property or interests in property blocked pursuant to the Executive Order No. 13224, or (C) engages in or conspires to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate, any of the prohibitions set forth in any Anti-Money Laundering and Anti-Terrorism Laws. Neither Seller, nor any person Controlling or Controlled by Seller, is a country, territory, individual or entity named on a Government List, and the monies used in connection with this Agreement and amounts committed with respect hereto, were not and are not derived from any activities that contravene any applicable anti-money laundering or anti-bribery Laws and regulations (including funds being derived from any person, entity, country or territory on a Government List or engaged in any unlawful activity defined under Title 18 of the United States Code, Section 1956(c)(7)).

Section 5.19. Support Obligations. Except as otherwise set forth in **Schedule 5.19**, there are no deposits, guaranties, letters of credit, performance or surety bonds or similar credit support arrangements issued by or for the account of Seller or any of its Affiliates required pursuant to any Project Contract or Project Permit to operate the Project Assets in a manner consistent with past practice during the Lookback Period ("Support Obligations"). **Schedule 5.19** sets forth a true, correct and complete list of all Support Obligations.

Section 5.20. No Other Representations or Warranties. The representations and warranties set forth in **ARTICLE 6** and the Ancillary Agreements to which Purchaser is a party constitute the sole and exclusive representations and warranties of Purchaser in connection with the transactions contemplated by this Agreement, and except for the representations and warranties expressly set forth in

ARTICLE 6 and the Ancillary Agreements to which Purchaser is a party, Seller disclaims reliance on any representations or warranties, either express or implied, by Purchaser, including any representation or warranty expressed or implied in any oral, written, or electronic response to any information request provided to Seller.

Section 5.21. Due Diligence. Seller has Made Available for Purchaser's review all information with respect to the Projects or the Project Assets which is material to the ownership, use, operation or maintenance of the Projects or Project Assets, taken as a whole for all Projects and Project Assets, consistent with past practice during the Lookback Period. To Seller's Knowledge, the information and documentation Made Available to Purchaser in the Data Room that was intentionally created or generated by Seller has been relied upon in the internal operations and management of the Projects and Seller has not intentionally included in the Data Room knowingly false information or knowingly omitted portions of such information or documentation from the Data Room.

ARTICLE 6

REPRESENTATIONS AND WARRANTIES OF PURCHASER

Purchaser, on behalf of itself and its Affiliates, as applicable, represents and warrants to Seller that, subject to such exceptions as are specifically disclosed in the Disclosure Schedules supplied by Purchaser to Seller and dated as of the Effective Date, all of the following are true and correct as of the Effective Date, except to the extent such representations and warranties are specifically made as of a particular date (in which case such representations and warranties are or will be true and correct as of such date):

Section 6.1. Organization, Authority, Validity and Non-Contravention.

(a) Purchaser is a limited liability company duly formed, validly existing and in good standing under the Laws of the State of Delaware. Purchaser has all requisite limited liability company power and authority to carry on its business as it is currently conducted.

(b) Purchaser has all requisite limited liability company power and authority to enter into this Agreement and the Ancillary Agreements to which Purchaser is a party, to perform its obligations hereunder and thereunder and to consummate the transactions contemplated hereby and thereby. The execution and delivery by Purchaser of this Agreement and the Ancillary Agreements to which Purchaser is a party, and the performance by Purchaser of its obligations hereunder and thereunder have been duly and validly authorized by all necessary limited liability company action.

(c) This Agreement has been duly executed and delivered by Purchaser and constitutes the valid, legal and binding obligation of Purchaser, enforceable against Purchaser in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles. Upon execution and delivery of the Ancillary Agreements to which Purchaser or any of its Affiliates is a party, each of such Ancillary Agreements will constitute the legal, valid and binding obligation of Purchaser or such Affiliate, enforceable against Purchaser or such Affiliate in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles.

Section 6.2. Solvency. No petition or notice has been presented, no order has been made and no resolution has been passed for the bankruptcy, liquidation, winding-up or dissolution of Purchaser. No receiver, trustee, custodian or similar fiduciary has been appointed over the whole or any part of

Purchaser's assets or the income of Purchaser. Purchaser has no plan or intention of, nor has Purchaser received any written notice that any other Person has any plan or intention of, filing, making or obtaining any such petition, notice, order or resolution or of seeking the appointment of a receiver, trustee, custodian or similar fiduciary.

Section 6.3. Litigation.

(a) There is no Action outstanding or pending or, to Purchaser's Knowledge, threatened, in each case, by Purchaser or against Purchaser, in each case, (i) relating to this Agreement or the transactions contemplated hereby, including the purchase of the Project Assets or (ii) which would reasonably be expected to result in the issuance of an Order restraining, enjoining or otherwise prohibiting or making illegal the consummation of the transactions contemplated hereby, including the purchase of the Project Assets.

(b) Purchaser has not received notice of any Order entered against Purchaser which (i) restrains, enjoins, or otherwise prohibits or makes illegal the consummation of the transactions contemplated by this Agreement, including the purchase of the Project Assets; or (ii) requires Purchaser to obtain any consent, authorization, approval or declaration from, or to make any filing, registration with or other notices to, any Governmental Authority (other than the Required Regulatory Approvals, the HSR Approval, the FCC Approval and the Purchaser Required Consents) in connection with the consummation of the transactions contemplated by this Agreement.

Section 6.4. No Conflicts. Assuming all of the Purchaser Required Consents have been obtained, the execution and delivery by Purchaser of and the performance by Purchaser of its obligations under, this Agreement and the Ancillary Agreements to which it is a party, does not and the consummation of the transactions contemplated hereby and thereby will not:

(a) conflict with or result in a breach of, or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under), the organizational documents of Purchaser;

(b) conflict with or result in a breach of or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under) or give rise to a right of termination, cancellation, modification or acceleration of any obligation, to any put or call or similar rights, or to loss of a benefit, in each case, under any material Contract or material Permit to which Purchaser is a party or by which its assets are bound; or

(c) conflict with or result in a violation or breach, in each case, in any material respect of any applicable Law.

Section 6.5. Purchaser Third Party Consents. **Schedule 6.5** sets forth a true, correct and complete list of all consents, approvals, authorizations, waivers, licenses, registrations, declarations, qualifications, filings or notices of or to Persons, including Governmental Authorities, other than the Required Regulatory Approvals, the HSR Approval, and the FCC Approval that are required in connection with the execution and delivery by Purchaser of this Agreement or any of the Ancillary Agreements to which Purchaser is a party, the performance of the obligations of Purchaser hereunder or thereunder, or the consummation by Purchaser of the transactions contemplated hereby and thereby (including the purchase of all Project Assets from Seller) (the "Purchaser Required Consents"). As of the Closing Date, all such Purchaser Required Consents are in full force and effect and are free of any term or condition which prohibits or restricts the consummation of the transactions contemplated by this Agreement or the purchase of the Project Assets.

Section 6.6. **Brokers**. Purchaser and its Affiliates have no Liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement or any of the Ancillary Agreements for which Seller or any of its Affiliates would become liable or obligated based upon arrangements made by Purchaser or any of its Affiliates.

Section 6.7. **Anti-Money Laundering and Anti-Terrorism Laws**. Neither Purchaser nor, to Purchaser's Knowledge, any of its subsidiaries or its parent company, is in violation of the Anti-Money Laundering and Anti-Terrorism Laws. Neither Purchaser nor, to Purchaser's Knowledge, any of its Affiliates, is acting, directly or indirectly, on behalf of terrorists, terrorist organizations or narcotics traffickers, including those persons or entities that appear on the Annex to Executive Order No. 13224, or are included on any relevant lists maintained by the Office of Foreign Assets Control of U.S. Department of Treasury, U.S. Department of State, or other U.S. Governmental Authorities, the United Nations Security Council, The European Union or any European Union Member State, all as may be amended from time to time. Neither Purchaser nor, to Purchaser's Knowledge, any of its subsidiaries or its parent company, in any capacity in connection with the purchase of the Project Assets (i) conducts any business or engages in making or receiving any contribution of funds, goods or services to or for the benefit of any person included in the lists referenced above, (ii) deals in, or otherwise engages in any transaction relating to, any property or interests in property blocked pursuant to the Executive Order No. 13224, or (iii) engages in or conspires to engage in any transaction that evades or avoids, or has the purpose of evading or avoiding, or attempts to violate, any of the prohibitions set forth in any Anti-Money Laundering and Anti-Terrorism Laws. Neither Purchaser, nor any person Controlling or Controlled by Purchaser, is a country, territory, individual or entity named on a Government List, and the monies used in connection with this Agreement and the amounts committed with respect hereto, were not and are not derived from any activities that contravene any applicable anti-money laundering or anti-bribery Laws and regulations (including funds being derived from any person, entity, country or territory on a Government List or engaged in any unlawful activity defined under Title 18 of the United States Code, Section 1956(c)(7)).

Section 6.8. **Inspection**. Purchaser has such knowledge and experience in financial and business matters that it is capable of evaluating the merits and risks of its participation in the transactions contemplated in this Agreement and the Ancillary Agreements. Purchaser has had the opportunity to conduct all such due diligence investigations of the Projects, Project Assets, including the contents of the Data Room and the physical environmental condition of the Project and Project Assets, including the Fee Simple Real Property and the Calkins Bridge Project Easement Reservation Real Property, as it deemed necessary or advisable in connection with entering into this Agreement and the Ancillary Agreements and the transactions contemplated hereby and thereby. Purchaser's acceptance of the Project and Project Assets at Closing shall be based upon its own investigation, examination and determination with respect thereto as to all matters and without reliance upon any express or implied representations or warranties of any nature made by or on behalf of or imputed to Seller, except as set forth in **ARTICLE 5** of this Agreement.

Section 6.9. **No Other Representations or Warranties**. The representations and warranties set forth in **ARTICLE 5** and the Ancillary Agreements to which Seller is a party constitute the sole and exclusive representations and warranties of Seller in connection with the transactions contemplated by this Agreement, and except for the representations and warranties expressly set forth in **ARTICLE 5** and the Ancillary Agreements to which Seller is a party, Purchaser disclaims reliance on any representations or warranties, either express or implied, by Seller, including any representation or warranty expressed or implied in any oral, written, or electronic response to any information request provided to Purchaser or any of its Affiliates. Purchaser has conducted its own independent review and analysis of the business, operations, assets, liabilities, results of operations, financial condition, technology, and prospects of the business of the Projects and acknowledges that Purchaser has been provided access to personnel,

properties, premises, and records of Seller related to the Projects and Project Assets for such purpose. In entering into this Agreement, Purchaser has relied upon, among other things, its due diligence investigation and analysis of Seller, the Projects and the Project Assets. EXCEPT AS OTHERWISE PROVIDED HEREIN, PURCHASER ACKNOWLEDGES AND AGREES THAT THE PROJECT ASSETS ARE BEING ACQUIRED "AS IS, WHERE IS" ON THE CLOSING DATE, AND IN THEIR CONDITION ON THE CLOSING DATE.

ARTICLE 7

COVENANTS OF THE PARTIES

Section 7.1. Reserved.

Section 7.2. Use of Seller's Marks. As soon as practicable, but no later than sixty (60) Days after the Closing, Purchaser shall cause the Projects to cease using any Seller's Marks, including eliminating Seller's Marks from all Project Assets and disposing of any unused stationery and literature of the Projects. From and after such date, except for any intellectual property rights that constitute a part of the Project Assets, Purchaser shall not, and shall cause the Projects not to, use Seller's Marks or any logos, trademarks, trade names, or other intellectual property rights owned or used by Seller, and Purchaser acknowledges that neither it nor the Projects shall have any rights whatsoever to use such intellectual property. During the Interim Period, the Parties shall discuss in good faith and use commercially reasonable efforts to agree on efforts to ensure that the use of Seller's Marks will cease as soon as practicable, but no later than sixty (60) Days after the Closing.

Section 7.3. Exclusivity. During the Interim Period, Seller shall not, and shall not permit its Affiliates, agents and representatives to, directly or indirectly, in the ordinary course of business (a) encourage, solicit, initiate, facilitate or continue inquiries regarding an Acquisition Proposal for the Project Assets; (b) enter into discussions or negotiations with, or provide any information to, any Person (except Purchaser) concerning a possible Acquisition Proposal for the Project Assets; or (c) enter into any Contract (whether or not binding) regarding an Acquisition Proposal. Seller hereby confirms Seller has ceased and caused to be terminated, and caused each of its representatives to cease and cause to be terminated, all discussions or negotiations with any Persons (except Purchaser) with respect to an Acquisition Proposal. If Seller receives any Acquisition Proposal or inquiry which could reasonably be expected to result in an Acquisition Proposal, Seller shall promptly advise Purchaser orally and in writing of such Acquisition Proposal or inquiry.

Section 7.4. Access.

(a) Until the earlier of the end of the Inspection Period or the termination of this Agreement, Purchaser, through its representatives, shall be entitled, upon reasonable advance written notice to Seller, to enter upon the Projects or other Project Assets during normal business hours for investigations and inspections as Purchaser deems reasonably necessary for Purchaser to complete its review and due diligence during the Inspection Period subject to the requirements of this **Section 7.4** and the following limitations: (i) Purchaser shall give Seller written notice at least three (3) Business Days before entering upon the Projects or other Project Assets, and one (1) or more representatives of Seller shall have the right to be present when Purchaser or its representatives conducts its or their investigations on, or otherwise enters upon, the Projects or other Project Assets; (ii) neither Purchaser nor its representatives shall unreasonably interfere with the use, occupancy or enjoyment of the Projects or Project Assets, by Seller or its employees, contractors, customers, licensees or guests; (iii) neither Purchaser nor its representatives shall intentionally damage any Projects, or other Project Assets or any portion thereof; (iv) Seller, in its reasonable discretion, may condition access to the Projects or Project

Assets on the delivery to Seller of a certificate of insurance naming Seller as an additional insured, evidencing commercial general liability insurance issued by an insurance company having a rating of at least "A-VII" by A.M. Best Company, with limits of at least Two Million Dollars ($2,000,000) per occurrence for bodily or personal injury or death and Five Million Dollars ($5,000,000) in the aggregate per location; (v) Purchaser shall (A) use commercially reasonable efforts to perform all on-site activity on an expeditious and efficient basis; and (B) indemnify, defend, reimburse and hold harmless Seller and the other Seller Indemnified Parties from and against any and all Losses (except for Losses from the mere discovery of conditions existing as of the time of inspection, and specifically excluding liabilities, claims, costs, liens or damages to the extent caused by the gross negligence or willful misconduct of Seller, Seller's Affiliates or any agent, contractor, or employee of Seller) incurred or suffered by Seller or any other Seller Indemnified Party as a result of Purchaser or its representatives exercising Purchaser's rights pursuant to this **Section 7.4**; and (vi) Purchaser shall not conduct any invasive investigations, testing, phase II environmental site assessments, or prepare or file a baseline environmental assessment or file a due care plan with the Michigan Department of Environment, Great Lakes, and Energy, soil borings, testing or sampling of any surface or subsurface materials/media or other invasive tests or studies of the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property, Projects or other Project Assets, including subsurface investigations or any sampling, coring, or drilling of soil or other media during the term hereof without Seller's prior written consent which shall not be unreasonably conditioned, delayed or withheld. The foregoing indemnification obligation shall survive Closing or the earlier termination of this Agreement.

(b) During the period following the expiration of the Inspection Period and prior to the Closing or the earlier termination of this Agreement, Seller will use commercially reasonable efforts to provide Purchaser with such assistance as Purchaser may reasonably request in connection with timely performing any Phase I environmental site assessment or conducting any land survey-related work with respect to the Projects, including (i) facilitating Purchaser's access to the Projects or other Project Assets during normal business hours, *provided* that Purchaser complies with the requirements in **Section 7.4(a)(vi)**, (ii) responding to requests from third party consultants, and (iii) making necessary personnel and materials available to Purchaser.

(c) Until Closing, or the earlier termination of this Agreement, Purchaser, or its representatives, shall upon reasonable advance written notice to Seller, be entitled to contact the local zoning office or other municipal offices with respect to its due diligence activities. Seller shall be provided at least five (5) Days prior written notice of all meetings Purchaser or its representatives may have during the Interim Period with any Governmental Authority (including the Michigan Department of Environment, Great Lakes, and Energy) relating to the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property, the Projects or the Project Assets or Purchaser's use thereof.

(d) For purposes of this **Section 7.4**, any advance or prior notice to be given to Seller of an intended inspection of the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property, the Projects or the Project Assets may be given by telephone and e-mail, to Adam Monroe at (231) 429-5033 and adam.monroe@cmsenergy.com; *provided* that such notice has been confirmed by return telephone call or e-mail from such Person.

Section 7.5. Inspections.

(a) During the Inspection Period, Purchaser shall complete (subject to **Section 7.4(a)**) its investigations with respect to the physical and environmental condition of the Projects and the Project Assets ("Inspections"). Prior to the expiration of the Inspection Period, Purchaser may provide Seller with a written notice that Purchaser has determined in good faith that Purchaser's Inspections identified physical and environmental conditions of the Projects or the Project Assets that materially interfere with

Purchaser's ability to perform its obligations under the Power Purchase Agreement and irrevocably elects to terminate this Agreement, along with a summary of all reasons for its conclusion ("Notice to Terminate"), and upon Seller's receipt of a Notice to Terminate (i) Purchaser shall return all written Confidential Information, (ii) this Agreement shall automatically terminate and Purchaser and Seller shall have no further obligations or liabilities under this Agreement, except those that expressly survive the earlier termination of this Agreement. Purchaser's termination rights shall be limited to material deficiencies in the physical condition of the Projects or Project Assets or its discovery of adverse material environmental conditions, in each case, that were either (A) not fully disclosed in information, materials and documents Made Available to Purchaser or (B) which differ in material respects from information, materials and documents Made Available to Purchaser. In the event that no Notice to Terminate is delivered by the expiration of the Inspection Period, then Purchaser shall be deemed to have accepted the condition of Land, the Projects and the Project Assets and the results of all its inspections.

(b) Any additional testing permitted to be performed by Purchaser relating to the environmental condition of the Projects, the Project Assets or otherwise pursuant to **Section 7.4** shall be subject to the following requirements (in addition to compliance with the requirements of **Section 7.4(a)(i)-(vi)**): (i) Purchaser shall supply its proposed scope of work to Seller describing, with specificity, the (A) nature of the testing contemplated, including the locations and number of samples to be obtained, the media (soil, groundwater, surface water, sediment or air) to be sampled, the sampling method and types of samples that will be subject to laboratory or field analysis, the types of contaminants for which the testing is being conducted, and plans for lawful disposal of any materials collected or produced and restoration of the Project Assets to substantially the same condition as existed on the Effective Date, and (B) the anticipated dates that any on site testing will take place; (ii) Purchaser shall provide Seller, upon Seller's written request, copies of any and all data, results, conclusions and reports generated as a result of or during Purchaser's testing relating in any manner to the environmental condition of the Projects or the Project Assets; (iii) Purchaser shall provide Seller with a draft of any final report which will be released to any third party, other than an insurance provider or its agents, and Purchaser shall consider in good faith any of Seller's comments with respect to such final reports; and (iv) any such reports shall be subject to confidentiality restrictions at least as strict as those set forth in **Section 7.9**.

(c) Purchaser, at Purchaser's sole expense, shall restore the Project Assets to substantially the same condition prior to any such Inspections or studies after conducting the same and repair any damage to the Project Assets caused by Purchaser or its representatives without unreasonable delay ("Restoration Obligations"). Purchaser agrees that it will not conduct any drilling or boring at the Land (other than the Fee Simple Real Property or Calkins Bridge Project Easement Reservation Real Property) and may only conduct drilling or boring on the Fee Simple Real Property or Calkins Bridge Project Easement Reservation Real Property with the prior written consent of Seller, which Seller shall not unreasonably withhold. In the event that this Agreement is terminated and the Closing has not occurred for any reason whatsoever, then Purchaser shall tender to Seller, at no cost to Seller, all third-party reports, surveys, and assessments that Purchaser obtained or had prepared from its consultants with respect to the Inspections of the Project Assets under this **Section 7.5**; *provided*, *however*, that Purchaser shall be permitted to redact any information that is proprietary to Purchaser. Any third-party reports, surveys, and assessments delivered to Seller under this Agreement shall be delivered without representation or warranty of any kind or nature as to such reports, surveys, and assessments, including without limitation the completeness or accuracy of any information in same. The provisions of this **Section 7.5** shall survive Closing or the earlier termination of this Agreement.

Section 7.6. Employee Matters.

(a) Within ninety (90) Days after the Effective Date, Purchaser shall, or shall cause an Affiliate of Purchaser to, provide a written offer of employment in accordance with **Section 7.6(c)** to be

effective upon the Closing Date to the Target Employees who are actively employed by Seller in the same position as of the Closing Date (the "Active Employees"), excluding those certain employees set forth on **Schedule 7.6(a)**. Any employees that are identified in **Schedule 7.6(a)** will be listed in accordance with the inverse seniority provisions of Article VII, Section 17 of the Collective Bargaining Agreement. In the case of Target Employees who, as of the Closing Date, are absent from active employment with Seller for any reason (including as a result of layoff, leave of absence, disability, illness or injury) (the "Inactive Employees"), such Inactive Employees shall not be offered employment by Purchaser or its Affiliate, as applicable, unless (i) (A) the Inactive Employee was absent from active employment with Seller as of the Closing Date on account of a short-term disability as determined under Seller's short-term disability plan or the leave provided by the Collective Bargaining Agreement, and (B) such Inactive Employee returns to active employment with Purchaser or its Affiliate, as applicable, within a period of thirty (30) Days following the Closing Date, or (ii) as required by the Collective Bargaining Agreement or applicable Employment Laws. The Business Employees who accept employment with Purchaser or its Affiliate, as applicable, shall be referred to herein as "Transferred Employees". Seller shall terminate the employment relationship with each Transferred Employee as of the Closing Date. Seller and Purchaser shall coordinate the timing of the Closing Date to ensure that Seller has adequate time to provide all notices required under applicable Law and that all bargaining obligations to the Union are made. Notwithstanding the foregoing, Purchaser shall, or cause an Affiliate of Purchaser to, make offers of employment to a sufficient number of Active Employees so as not to trigger any obligations under the WARN Act on the part of Seller.

(b) For each Transferred Employee that is also a Union Employee ("Transferred Union Employees"), Purchaser shall, or shall cause an Affiliate of Purchaser to, continue employment for the Transferred Union Employees in accordance with and subject to the applicable terms and conditions set forth within the Collective Bargaining Agreement.

(c) The offer for each Transferred Employee that is also a Non-Union Employee ("Transferred Non-Union Employee"), Purchaser or its Affiliate shall maintain, for a period of at least twelve (12) months following the Closing Date, (i) a wage rate or base salary, as applicable, that is no less than the wage rate or base salary as in effect for such Transferred Non-Union Employee immediately prior to the Closing Date, (ii) annual cash target bonus opportunity for such Transferred Non-Union Employee that is no less than the annual cash target bonus opportunity (excluding change in control or retention bonuses) as in effect immediately prior to the Closing Date, and (iii) employee benefits comparable, in the aggregate, to those in effect for similarly situated employees of Purchaser and its Affiliates. As of and after the Closing Date, and to the extent permitted by the applicable plan, Purchaser or its Affiliate, as applicable, shall provide to each Transferred Non-Union Employee full credit for all purposes under any Employee Benefit Plan, policy or arrangement of Purchaser for such Transferred Non-Union Employee's service prior to the Closing Date with Seller, to the same extent such service is recognized by Seller under a comparable Employee Benefit Plan in which the Transferred Non-Union Employee participated immediately prior to the Closing Date; *provided* that such service shall not be credited to the extent it would result in a duplication of benefits or with respect to benefit accruals under any defined benefit plan.

(d) Health Coverage for Transferred Non-Union Employees. Purchaser shall take commercially reasonable actions to cause each Transferred Non-Union Employee and his or her eligible dependents to be offered coverage on and after the Closing Date by a group health plan or plans that (i) comply with the provisions of **Section 7.6(c)**, (ii) do not limit or exclude coverage on the basis of any pre-existing condition of such Transferred Non-Union Employee or dependent (other than any limitation already in effect under the applicable group health Employee Benefit Plans) or on the basis of any other exclusion or waiting period not in effect for the Transferred Non-Union Employee under the applicable group health Employee Benefit Plans, and (iii) provide each Transferred Non-Union Employee full credit

under Purchaser's group health plans, for the year in which the Closing Date occurs, for any deductible, co-insurance, and/or co-payment already incurred by the Transferred Non-Union Employee under the applicable group health Employee Benefit Plans and for any other out-of-pocket expenses that count against any maximum out-of-pocket expense provision of the applicable group health Employee Benefit Plans and/or Purchaser's group health plans. To the extent that a Transferred Non-Union Employee was a participant in an Employee Benefit Plan prior to the Closing Date, such Employee Benefit Plan shall be responsible for providing welfare benefits to any participating Transferred Non-Union Employee for claims incurred prior to the Closing Date under, in accordance with, and subject to the generally applicable terms and conditions of such plans. In addition, following the Closing Date, Purchaser shall provide COBRA continuation coverage that satisfies ERISA and Code Section 4980B, to any Transferred Non-Union Employee (and their qualified beneficiaries) who incurs a qualifying event after the Closing Date. For the avoidance of doubt, Seller shall remain liable for COBRA continuation coverage for any former Seller employee who did not become a Transferred Employee at or prior to the Closing Date.

(e) Severance, Transferred Non-Union Employees. With respect to each Transferred Non-Union Employee whose employment is terminated without cause during the period commencing on the Closing Date and ending twelve (12) months after the Closing Date, Purchaser shall provide such Transferred Non-Union Employee with severance benefits no less favorable to those that such Transferred Non-Union Employee would receive under Seller's applicable severance plan or program, as though all conditions of the severance plan or program are met, including the requirement to timely return a valid general release agreement in favor of Purchaser, taking into account and combining such Transferred Non-Union Employee's service with Seller prior to the Closing Date and with Purchaser on and after the Closing Date.

(f) Transferred Non-Union Employee Accrued Vacation, Sick Leave and Personal Time. Purchaser will recognize and assume all liabilities with respect to accrued but unused vacation time for all Transferred Non-Union Employees (including, without limitation, any liabilities for payments in respect of earned but unused vacation time that arise as a result of the transfer of employment contemplated by this **Section 7.6**) ("Accrued Vacation Time Liabilities"). To the extent required by applicable law or by company policy, Seller shall be responsible for making payments to any Transferred Non-Union Employees in respect of earned but unpaid base salary or base wages and unreimbursed business expenses incurred through the Closing Date, in each case, that become due as a result of the transfer of employment contemplated by this **Section 7.6**. Purchaser shall allow Transferred Non-Union Employees to use the vacation, sick leave and personal time in accordance with the terms of Seller's programs in effect immediately prior to the Closing Date (in addition to, and not in lieu of, any vacation accrued under the applicable vacation plans or policies of Purchaser on or following the Closing Date).

(g) Transferred Non-Union Employee 401(k) Plan. Within sixty (60) Days following the Closing Date, Purchaser shall permit participation by the Transferred Non-Union Employees in Purchaser's Tax-qualified defined contribution plan or plans with a cash or deferred feature (the "Purchaser 401(k) Plan") for the benefit of each Transferred Non-Union Employee who, as of immediately prior to the Closing Date, was eligible to participate in a Tax-qualified defined contribution plan maintained by Seller (collectively, the "Seller 401(k) Plans"). As soon as practicable after the Closing Date, the Seller 401(k) Plans shall, to the extent permitted by Section 401(k)(10) of the Code and the Seller 401(k) Plans' applicable terms, make distributions available to Transferred Non-Union Employees, and the Purchaser 401(k) Plan shall accept any such distribution (including loans) as a rollover distribution if so directed by the Transferred Non-Union Employee.

(h) Transferred Non-Union Employee Annual Bonuses. Without limiting the generality of **Section 7.6(c)**, following the Closing Date, Purchaser shall cause the Transferred Non-Union Employees to participate in short-term annual cash incentive compensation plans of Purchaser (as

if each Transferred Non-Union Employee had been employed with Purchaser from the start of Purchaser's applicable plan year) for the remainder of the plan year in which the Closing Date occurs that provide short-term annual cash incentive compensation opportunities that are no less favorable than those provided to such Transferred Non-Union Employees immediately prior to the Closing Date.

(i) Access to Employees & Records After Closing. For a period of three (3) years after the Closing Date, Seller shall have reasonable access to all of the Books and Records of the Transferred Employees, to the extent that such access may reasonably be required in connection with matters relating to or affected by the operations of Seller's business prior to the Closing Date, and any other reasonable need of Seller to consult such Books and Records, including Seller's access to such Books and Records for Tax purposes, including the preparation of Seller's Tax Returns, and any Tax audits. Purchaser also agrees to make the Transferred Employees available to Seller, as reasonably necessary and warranted, to participate and provide testimony in any litigation, investigation, or legal matter that may arise after the Closing Date, that is related to matters they may have witnessed and/or have information or knowledge about in connection with their prior employment with Seller. Such access shall be afforded by Purchaser upon receipt of reasonable advance notice and during normal business hours.

(j) No Solicitation. From and after the Closing Date until the two (2) year anniversary of the Closing Date, Seller shall not, without the prior written consent of Purchaser, directly or indirectly, engage, recruit, solicit or otherwise attempt to engage or hire any Transferred Employee, or induce or attempt to induce any such Transferred Employee to leave employment with Purchaser; *provided*, Seller shall not be prohibited from advertising job openings by use of third party recruiters, newspapers, magazines, the internet, social media or any other media, so long as such efforts are not specifically directed at any Transferred Employee. From and after the Closing Date until the two (2) year anniversary of the Closing Date, Purchaser shall not, without the prior written consent of Seller, directly or indirectly, engage, recruit, solicit or otherwise attempt to engage or hire any Seller Employee, or induce or attempt to induce any such Seller Employee to leave employment with Seller; *provided,* Purchaser shall not be prohibited from advertising job openings by use of third party recruiters, newspapers, magazines, the internet, social media or any other media, so long as such efforts are not specifically directed at any Seller Employee. The Parties agree that the rights and remedies for non-compliance with this **Section 7.6(j)** will be limited solely to seeking specific enforcement of this **Section 7.6(j)**, it being acknowledged and agreed that any such breach or threatened breach will cause irreparable injury to the other Party and that money damages would not provide an adequate remedy.

(k) The provisions of this **Section 7.6** are solely for the benefit of the Parties and nothing in this **Section 7.6** express or implied shall confer upon any Transferred Non-Union Employee or any legal representative or beneficiary thereof or any other Person other than the Parties any rights or remedies, including any right to employment, or continued employment for any specified period, of any nature or kind whatsoever. Nothing in this **Section 7.6** or this Agreement, express or implied, shall be deemed an establishment or amendment of any Employee Benefit Plan or construed to prevent Purchaser or its Affiliates from terminating, amending or modifying any Employee Benefit Plan.

Section 7.7. Operation and Maintenance of Project Assets.

(a) Commencing on the Effective Date and ending on the earlier of the Closing or the termination of this Agreement, except as otherwise consented to by Purchaser in writing, which consent shall not be unreasonably withheld, conditioned or delayed, or as may be required by Seller by the express terms of this Agreement to satisfy a condition precedent to Closing pursuant to **Section 4.1** or **Section 8.2** (and only to the extent such actions are taken consistent with the terms of this Agreement), Seller shall conduct its business with respect to the Projects in the ordinary course and consistent with Prudent

Utility Practices (including with respect to (i) keeping in full force and effect its legal existence, (ii) preserving and maintaining the Project Assets as they are currently being preserved and maintained, (iii) maintaining the Books and Records, (iv) performing and complying in all respects with the Material Contracts, Material Permits, and Material Environmental Permits, (v) maintaining the Insurance Policies, and (vi) performing and complying in all material respects with applicable Law).

(b) Commencing on the Effective Date and ending on the earlier of the Closing or the termination of this Agreement, Seller shall provide written notice to Purchaser promptly following any of the following matters:

(i) Any material emergency (subject to **Section 7.7(e)**), Casualty and Casualty Losses, Condemnation and Condemnation Losses or other similar material change affecting the use or operation of any Project or any of the material Project Assets;

(ii) Responding to any inquiries or requests from FERC related to the FERC Licenses that if occurring on or prior to the Effective Date would need to be disclosed on **Schedule 5.6(e)**;

(iii) Entering into the EGLE Joint Funding Agreements in accordance with **Section 7.12(o)**;

(iv) Entering into a new collection agreement with the U.S. Department of Agriculture Forest Service for annual payment of recreation facility operating and maintenance expenses, or more than one new collection agreements if Closing does not occur during the term of the first new collection agreement, to replace the collection agreement between the U.S. Department of Agriculture Forest Service and Seller for the 2025 fiscal year; or

(v) Seller's or any of Seller's Affiliates' receipt of written notice of (A) any violation or alleged violation of any applicable Law with respect to the Projects or the Project Assets or (B) default or material breach under any Material Contract, Material Permit, Material Environmental Permit or FERC License.

(c) Commencing on the Effective Date and ending on the earlier of the Closing or the termination of this Agreement, Seller shall provide prior written notice to Purchaser of any of the following matters:

(i) Submitting any filings or formal communications to FERC related to the FERC Licenses that would change Seller's obligations, responsibilities or liabilities under the FERC Licenses in effect as of the Effective Date; or

(ii) Making any capital expenditures or committing to make any capital expenditures with respect to the Projects in excess of One Million Dollars ($1,000,000), except (A) for capital expenditures related to operational emergencies, equipment failures or outages or other Casualties or expenditures that Seller reasonably determines are then necessary to maintain the safety and integrity of any Project Asset or (B) for capital expenditures as required by applicable Law, Project Permit or a Governmental Authority.

(d) Commencing on the Effective Date and ending on the earlier of the Closing or the termination of this Agreement, except as set forth in **Schedule 7.7(d)**, Seller shall obtain Purchaser's

written consent, which shall not be unreasonably withheld, conditioned or delayed, prior to taking any of the following actions:

(i) Terminating or modifying any Material Contract, Material Permit, Material Environmental Permit or FERC License;

(ii) Entering into any Project Contract which, if existing as of the Effective Date, would have constituted a Material Contract;

(iii) Selling, conveying, transferring, leasing, licensing, encumbering, or otherwise disposing of, or permitting or allowing the imposition of any Lien (other than Permitted Exceptions) upon, any of the Project Assets, outside of the ordinary course of business;

(iv) The termination or material modification of any Material Permit, FERC License, or failing to obtain or renew any Material Permit, Material Environmental Permit or FERC License required to own and operate the Projects and the Project Assets;

(v) Taking any action under or authorizing or approving any action under the Hardy EPC Agreement, including instructing the counterparty thereto to initiate any work thereunder; or

(vi) Entering into any agreement or otherwise committing to take any actions described in the foregoing clauses.

(e) Notwithstanding **Section 7.7(a)**, **Section 7.7(b)**, **Section 7.7(d)** or any other provision to the contrary in this Agreement, Seller may take such actions with respect to any emergency situation as Seller may reasonably determine necessary or appropriate to comply with Permits or applicable Laws; *provided*, that Seller shall provide prompt notice following such emergency situation.

Section 7.8. R&W Policy.

(a) Contemporaneously with the Effective Date, a buyer-side representation and warranty insurance policy (the "R&W Policy") shall be in effect, to be bound at the Closing, to provide Purchaser with recourse with respect to Losses due to breaches of representations and warranties under **ARTICLE 5**. From and after Closing, Purchaser shall maintain the R&W Policy in full force and effect in accordance with its terms. On or before the Effective Date, Purchaser shall deliver to Seller a true, correct and complete copy of such R&W Policy.

(b) The Parties acknowledge and agree that the R&W Policy shall contain terms and conditions providing that R&W Insurer, in connection with this Agreement, any Ancillary Agreement or certificate delivered pursuant to this Agreement and the transactions contemplated hereby and thereby, (i) has waived its rights to bring any dispute against Seller or any of its Affiliates by way of subrogation, claim for contribution, or otherwise (except in cases of Fraud by Seller), (ii) has waived its rights to bring any dispute against any of Seller's or any of its Affiliates' respective past, present and future representatives by way of subrogation, claim for contribution, or otherwise (except in cases of Fraud by Seller), and (iii) has agreed that none of Purchaser or any of its Affiliates shall have any obligation to pursue any claim against Seller or any of its Affiliates or their respective past, present or future representatives in connection with any Liability under the R&W Policy.

(c) Purchaser shall not, and shall not permit any of its Affiliates to, terminate, waive, amend, modify, or otherwise revise any of the subrogation provisions of the R&W Policy in a manner that is adverse to Seller or any of its Affiliates or representatives without prior written consent of Seller, such consent to be in Seller's sole discretion.

(d) All costs and expenses related to the R&W Policy, including the total premium, deductibles, underwriting costs, brokerage commissions and other fees and expenses of such policy shall be paid one hundred percent (100%) by Purchaser. From and after the Closing, to the extent requested in writing, Seller shall, and shall cause its Affiliates to, use good faith efforts to reasonably cooperate with Purchaser in connection with any claim made under the R&W Policy.

(e) Nothing in this Agreement shall limit the right of Purchaser (or an Affiliate thereof) to make claims against the R&W Policy. For the avoidance of doubt, as between Purchaser, on the one hand, and the R&W Insurer, on the other hand, none of the terms, limitations, conditions and restrictions (including time for asserting claims) set forth in this Agreement are intended to affect the rights of Purchaser (or any Affiliate thereof) under the R&W Policy, which rights shall be governed solely thereby.

(f) Purchaser shall not obtain any other representations and warranties insurance policy or similar insurance policy related to this Agreement, Seller, or any of the Project Assets unless it contains a waiver by the insurer of any indemnification, contribution, subrogation or other rights to pursue any claim against Seller, any of its Affiliates or any of Seller's or any of its Affiliates' respective past, present and future representatives except in the event of Fraud (including rights of Seller to enforce such a waiver) which has been reviewed and approved in writing by Seller, such approval not to be unreasonably withheld, conditioned or delayed.

(g) Seller's Affiliates, on and after the Closing Date, and their past, present and future representatives are intended to be third-party beneficiaries of this **Section 7.8**. The foregoing obligations shall survive Closing.

Section 7.9. Confidentiality.

(a) Each Party shall hold all Confidential Information in confidence and shall not disclose or permit the disclosure of the Confidential Information to any Person without the other Party's prior written consent. Each Party further agrees that, before the Closing, each Party will use the Confidential Information only for purposes of evaluating the Project Assets in connection with its purchase thereof in accordance with the terms of this Agreement. Each Party shall not disclose the transaction contemplated hereby or the Confidential Information to any Person, other than to such Party's employees, officers, directors, attorneys, accountants, lenders, investors and consultants who (i) have a need to review the Confidential Information for the purpose of advising such Party in respect to the transaction contemplated hereby, (ii) have been informed in writing of the confidential nature of such information and (iii) have agreed to be bound by the terms of this Agreement. Each Party shall ensure that all Persons to whom it discloses the Confidential Information shall keep the same confidential in accordance with the terms of this Agreement. In any event, each Party shall be responsible for any breach of this Agreement by any Person to whom such Party discloses the Confidential Information. For the avoidance of doubt, the Equity Commitment Letter shall be treated as Confidential Information of Purchaser.

(b) Notwithstanding the above terms, to the extent that a Party is required to disclose the Confidential Information by any Governmental Authority or by applicable Law or stock exchange rule, or as part of its required Securities and Exchange Commission filings, or pursuant to a subpoena, Order or other legal proceeding, such Party shall, unless prohibited from doing so by Governmental

Authority or applicable Law, notify the other Party (both by telephone and in writing) within one (1) Business Day of its knowledge of such legally required disclosure. Each Party shall reasonably cooperate with the other Party's counsel (at no out-of-pocket cost or expense to the Party required to reasonably cooperate) in any appeal or challenge to such disclosure made by the other Party. If no protective order or similar relief is obtained, such Party shall (i) disclose only that portion of the Confidential Information that it is legally obligated to disclose, (ii) exercise commercially reasonable efforts to obtain reliable assurances that the disclosed information will be kept confidential and (iii) exercise commercially reasonable efforts to provide the other Party with a copy of the information to be disclosed before the same is given to any third party. In addition, and notwithstanding anything to the contrary in this Agreement, each Party may disclose any portion of the Confidential Information in connection with any court filings with respect to any dispute between the Parties with respect to this Agreement or the Project Assets.

(c) If this Agreement is terminated prior to the Closing, (i) each Party shall promptly deliver to the other Party all the Confidential Information which is in tangible form, including any copies such Party has made and other embodiments thereof, and (ii) each Party shall destroy all extracts, summaries and compilations thereof and references thereto which are in such Party's notes, documents, databases or other records (whether prepared by any Party), and in either case such Party will certify to the other Party by written affidavit that it has done so.

(d) Each Party acknowledges that the Confidential Information is of a special, unique, unusual, extraordinary and intellectual character and that the other Party's interest in the Confidential Information may be irreparably injured by such Party's disclosure of such Confidential Information in violation of this Agreement. Each Party further acknowledges and agrees that money damages would not be a sufficient remedy for any breach of this **Section 7.9** by it and that, in addition to all other remedies available at Law or in equity, the other Party shall be entitled to specific performance or injunctive or other equitable relief as a remedy for any breach or potential breach by the such Party of this **Section 7.9** and further agrees to waive any requirement for the securing or posting of any bond in connection with such remedy.

(e) Seller shall remain obligated to comply with the terms of any previously executed Confidentiality Agreement provided to Purchaser.

The provisions of this **Section 7.9** shall survive for a period of twenty-four (24) months following the Closing Date or the earlier termination of this Agreement.

Section 7.10. Memorandum of Environmental Indemnity Agreement. At the Closing, the Parties and Subsidiaries shall finalize and attach exhibits and/or record, as required, the Memorandum of Environmental Indemnity Agreement.

Section 7.11. PLLI. Purchaser and Seller have agreed upon the principal terms, amounts and coverages to be contained in the Pollution Legal Liability with Excess Indemnity Insurance for each Project (the "PLLI"), summaries and/or copies of which are attached hereto as **Exhibit N**. Purchaser shall not disclose to Seller the results of any PLLI related environmental reports, unless Seller requests a copy of such information in writing. Prior to the Closing, Purchaser shall use commercially reasonable efforts to (a) cause the insurance companies to issue the PLLI to Purchaser, identifying Seller as an additional insured in the PLLI for purposes of Purchaser's indemnity obligations and containing the other terms set forth in **Exhibit N** and the PLLI in form acceptable to Seller, and (b) provide Seller evidence that the premiums due for the PLLI have been paid in full. Purchaser shall cause the PLLI to comply with the terms of this Agreement and, except as otherwise provided herein or in any Ancillary Agreement, shall not cause or allow the same to lapse or be modified or amended or any claim under the PLLI settled

and/or released without Seller's prior written consent. The provisions of this **Section 7.11** shall survive the expiration or early termination of this Agreement.

Section 7.12. Governmental Approvals; Required Consents.

(a) Notwithstanding anything to the contrary in this **Section 7.12,** Purchaser shall not submit any application for Governmental Approvals without first obtaining Seller's prior written consent.

(b) Except for (i) the applications for the FERC Approvals, (ii) obtaining Tax identification numbers for the Reserved Easements, (iii) the application for the MPSC Approval, and (iv) the filing for HSR Approval, Purchaser shall be responsible, at its sole cost and expense, for obtaining all Governmental Approvals during the Interim Period, if any. Purchaser shall, at its sole cost and expense, prepare and file all applications for such Governmental Approvals related to Purchaser's ownership and intended use, and Seller shall cooperate and sign as the owner as necessary on applications with respect to any zoning changes and/or mergers of Seller's property in order to be in a position to convey the Project Assets to Purchaser. Other than the legal descriptions and surveys for the Reserved Easements and any reasonably requested documentation in Seller's possession or control as of the Effective Date, in each case which Seller shall provide to Purchaser at no cost and expense to Purchaser and within a reasonable time before such documentation is required in connection with any applications for Governmental Approvals, Purchaser, at its sole cost and expense, shall provide all of the necessary drawings, surveys, elevations, renderings, and other documents required by applicable Laws, and such other documents as may be necessary for the applications for such Governmental Approvals. Each submittal to the applicable Governmental Authorities for such Governmental Approvals shall comply with the requirements of the then applicable Laws applicable to the same. Purchaser shall use commercially reasonable efforts to pursue the Governmental Approvals for which Purchaser is responsible in accordance with this **Section 7.12(b)**.

(c) Each Party acknowledges and agrees that receipt of the FERC Approvals is required as part of the Governmental Approvals and is a condition precedent of Seller and Purchaser to the Closing. Each Party shall cooperate in good faith with the other Party in preparing each application for the FERC Approvals and satisfying FERC requirements, and each Party shall promptly support the other Party as needed to follow-up on all FERC requests with each Party bearing its own costs and sharing equally any third-party, non-legal, expenses. Purchaser acknowledges and agrees that as a condition of granting the FERC Approvals, FERC will require assurances from Purchaser that it has the financial capability to hold the FERC Licenses and operate and maintain the Projects pursuant to the FERC Licenses and applicable Law and that in connection therewith, Purchaser or its Affiliate will provide such customary information about its financial capability with respect to the Projects as FERC may request. The Parties shall (to the extent permitted by applicable Law) promptly furnish each other with copies of any notices, correspondence or other written communication from FERC. Unless otherwise agreed in writing by the Parties, the applications for the FERC Approvals shall be submitted by Seller (and Purchaser, as required) no later than sixty (60) Days after the Effective Date. The Parties recognize that the FERC Approval process does not necessarily have a specific time limit. Both Parties shall use commercially reasonable efforts to pursue the FERC Approvals. Neither Party shall object to or take any action to oppose any of the applications for FERC Approvals. If a Party believes that the other Party has taken any action that would be adverse to the FERC Approvals, that Party shall provide written notice to the other Party taking such action requesting immediate retraction or action to reverse the adverse action.

(d) Each Party acknowledges and agrees that receipt of the MPSC Approval is required as part of the Governmental Approvals and is a condition precedent of Seller and Purchaser to the Closing. Purchaser shall cooperate in good faith with Seller in Seller's preparation of the application and filing for the MPSC Approval and satisfying MPSC requirements, and each Party shall promptly

support the other Party as needed to follow-up on all MPSC requests with each Party bearing its own costs and sharing equally any third-party, non-legal, expenses. Unless otherwise agreed in writing by the Parties, the application for the MPSC Approval shall be submitted by Seller (and Purchaser, as required or permitted) no later than sixty (60) Days after the Effective Date. The Parties recognize that the MPSC Approval process does not necessarily have a specific time limit. Both Parties shall use commercially reasonable efforts to pursue the MPSC Approval. Neither Party shall object to or take any actions to oppose the application for the MPSC Approval. If a Party believes that the other Party has taken any action that would be adverse to the MPSC Approval, that Party shall provide written notice to the other Party taking such action requesting immediate retraction or action to reverse the adverse action.

(e) Purchaser shall cooperate in good faith with Seller in Seller's preparation of the application and filing for the FCC Approval and satisfying FCC requirements, and each Party shall promptly support the other Party as needed to follow-up on all FCC requests with each Party bearing its own costs and sharing equally any third-party, non-legal, expenses. Unless otherwise agreed in writing by the Parties, the application for the FCC Approval shall be submitted by Seller (and Purchaser, as required or permitted) no later than sixty (60) Days after the Effective Date. The Parties recognize that the FCC Approval process does not necessarily have a specific time limit. Both Parties shall use commercially reasonable efforts to pursue the FCC Approval. Neither Party shall object to or take any actions to oppose the application for the FCC Approval. If a Party believes that the other Party has taken any action that would be adverse to the FCC Approval, that Party shall provide written notice to the other Party taking such action requesting immediate retraction or action to reverse the adverse action.

(f) Each Party shall provide the other Party the opportunity to review any and all initial application filings related solely to the Projects and Project Assets with respect to the FERC Approvals set forth in **Section 7.12(c)** by delivering draft copies of such filings to the other Party prior to their submission to FERC. With respect to any such filings required to be submitted in accordance with pre-scheduled filing deadlines, each Party shall ensure that any such filings are provided in draft for the other Party's review no later than five (5) Business Days before the applicable filing deadline.

(g) Seller shall provide Purchaser the opportunity to review any and all initial application filings related solely to the Projects and Project Assets with respect to the MPSC Approval set forth in **Section 7.12(d)** by delivering draft copies of such filings to Purchaser prior to their submission to the MPSC. With respect to any such filings required to be submitted in accordance with pre-scheduled filing deadlines, Seller shall ensure that any such filings are provided in draft for Purchaser's review no later than five (5) Business Days before the applicable filing deadline.

(h) Seller shall provide Purchaser the opportunity to review any and all initial application filings related solely to the Projects and Project Assets with respect to the FCC Approval set forth in **Section 7.12(e)** by delivering draft copies of such filings to Purchaser prior to their submission to the FCC. With respect to any such filings required to be submitted in accordance with pre-scheduled filing deadlines, Seller shall ensure that any such filings are provided in draft for Purchaser's review no later than five (5) Business Days before the applicable filing deadline.

(i) Each Party shall keep the other Party apprised in a prompt manner of the status and substance of any communications with, and inquiries or requests for additional information from any Governmental Authority in connection with the transactions contemplated by this Agreement. The Parties shall promptly respond to such inquiries or requests for additional information made by any Governmental Authority, use their respective commercially reasonable efforts to participate in any hearings, settlement proceedings or other proceedings ordered with respect to the transactions contemplated by this Agreement, and use their respective commercially reasonable efforts to cause all filings, applications, registrations, consents and authorizations required for the consummation of the

transactions contemplated by this Agreement to be obtained at the earliest possible date after the date of applicable filing.

(j) Seller shall cooperate in good faith with Purchaser, and provide such reasonable documentation as required, in connection with, (i) with respect to the Projects (other than the Hardy Project), all necessary notices of self-certification of Qualifying Facility status in accordance with 18 C.F.R. § 292.203(a)(3) for each such Project, and (ii) with respect to the Hardy Project, all necessary notices of self-certification as an "exempt wholesale generator" in accordance with 18 C.F.R. § 366.1 for the Subsidiary that will take ownership of such Project.

(k) Each of Purchaser and Seller shall use commercially reasonable efforts to make, or cause to be made, an appropriate pre-merger notification filing required under the HSR Act with respect to the transactions contemplated hereby within twenty-five (25) Business Days after a date to be mutually agreed to by the Parties (which date shall be no more than one (1) year before the reasonably anticipated Closing). Each of Purchaser and Seller, shall supply as promptly as practicable any additional information and documentary material that may be requested or required pursuant to the HSR Act with respect to the transactions contemplated by this Agreement. Each Party shall promptly support the other Party as needed to provide as promptly as practicable any additional information and documentary material that may be requested pursuant to the HSR Act, with each Party bearing its own costs. Both Parties shall use commercially reasonable efforts to pursue the HSR Approval. Neither Party shall object to or take any actions to oppose the application for the HSR Approval. Each of the Parties shall use commercially reasonable efforts to (i) cooperate with each other in connection with any filing or submission and in connection with resolving any investigation or other inquiry to receive HSR Approval, (ii) keep Purchaser and Seller informed in all material respects of any material communication received by such Party from any Governmental Authority, provide each other with advance copies and a reasonable opportunity to comment on all material proposed notices, submissions, filings, applications, undertakings, and information and correspondence proposed to be supplied to or filed with any Governmental Authority, except the Parties' HSR Act filings, and keep the other party informed in all material respects of any material communication received from a Governmental Authority and (iii) to the extent permitted by Law, permit Purchaser or Seller, as applicable, a reasonable opportunity to attend and participate in any substantive meetings, discussions, telephone conversations, videoconferences, or correspondence with any Governmental Authority; *provided* that materials required to be provided pursuant to this **Section 7.12(k)** may be redacted to remove references (A) concerning the valuation of the Projects, (B) as necessary to comply with contractual arrangements, (C) as necessary to comply with applicable Law, and (D) as necessary to address reasonable privilege or confidentiality concerns; *provided further* that a Party may reasonably designate any competitively sensitive material provided to another Party under this **Section 7.12(k)** as "Outside Counsel Only."

(l) During the Interim Period, the Parties shall use commercially reasonable efforts to provide such information and execute such documents as are reasonably necessary in order to obtain the consent of the counterparty to the Hardy EPC Agreement in accordance with **Section 5.5** in connection with the assignment of the Hardy EPC Agreement to Purchaser; *provided* obtaining such consent shall not be a condition to Closing. If such consent is not obtained prior to Closing, then the Parties will use good faith efforts to obtain such consent following the Closing Date and upon obtaining such consent Seller shall sell, transfer, convey, assign and deliver all of its rights, title, interest and Liabilities (other than Excluded Liabilities), and Purchaser shall accept and assume all of Seller's rights, title, interest and Liabilities (other than Excluded Liabilities) arising, in and to the Hardy EPC Agreement pursuant to an assignment and assumption agreement substantially in the form of **Exhibit F**.

(m) Following Closing, the Parties will continue to cooperate in good faith to apply for and obtain any additional FERC license amendments and other necessary approvals as may be required

in connection with any changes to the Reserved Easements and Temporary Substation Easements pursuant to **Section 3.1(g)** to ensure that: (i) each FERC License, including FERC Licensed Property, includes only real estate and infrastructure needed for Purchaser to meet FERC regulatory requirements; (ii) Purchaser obtains or retains rights to FERC Licensed Property and FERC licensed infrastructure sufficient to meet FERC regulatory requirements; and (iii) Seller obtains or retains rights sufficient to FERC Licensed Property for access to, and for the construction, operation, maintenance, and decommissioning of utility infrastructure located on FERC Licensed Property.

(n) During the Interim Period, Seller shall cooperate and work in good faith to assist Purchaser entering into replacement Tower Leaseback Agreements.

(o) (i) Seller shall use commercially reasonable efforts to enter into joint funding agreements with the Michigan Department of Environment, Great Lakes, and Energy for stream gauges and water quality for the following periods (each, an "EGLE Joint Funding Agreement" and collectively, the "EGLE Joint Funding Agreements"): (a) beginning October 1, 2025 and ending September 30, 2026 and (b) if the Closing has not occurred on or before December 31, 2026, the period beginning October 1, 2026 and ending September 30, 2027, and (ii) Seller shall pay all amounts owed thereunder when due.

Section 7.13. Transition Services Agreement. Between the Effective Date and the Closing, Purchaser and Seller shall cooperate in good faith to discuss and agree to mutually acceptable schedules, annexes or exhibits to the Transition Services Agreement attached hereto as **Exhibit P**. At the Closing, Seller and Purchaser shall enter into the Transition Services Agreement in substantially the form attached hereto as **Exhibit P**, with such supplements or other changes (including as to the schedules, annexes or exhibits to the Transition Services Agreement) as are mutually agreed by Purchaser and Seller prior to the Closing, such agreement not to be unreasonably withheld, conditioned or delayed. Prior to the Closing, Seller shall reasonably cooperate with Purchaser's requests to prepare to provide services under the Transition Services Agreement. In addition, during the Interim Period and for a period not to exceed one hundred and twenty (120) Days following the Closing Date, Seller shall use commercially reasonable efforts (a) to facilitate introductions and provide Purchaser with access to Seller's employees that directly support the Projects to facilitate Purchaser's operation of the Projects from and after Closing consistent with ordinary course of business; and (b) to facilitate introductions to third-party vendors, service providers and other third parties that Seller has contracted with for purposes of the Projects during the Lookback Period to facilitate Purchaser establishing its own direct contractual relationships with such vendors, service providers and other third parties.

Section 7.14. Interconnection Agreements; Transfer of CPNodes.

(a) During the Interim Period, Purchaser shall use commercially reasonable efforts to negotiate and finalize the METC Interconnection Agreements. Seller shall use commercially reasonable efforts to facilitate such efforts, including providing reasonably requested information and addressing any reasonable requests or requirements from METC needed to facilitate such negotiations. Purchaser shall keep Seller informed of the progress and any material developments related to the negotiation and finalization of the METC Interconnection Agreements.

(b) During the Interim Period, Purchaser shall use commercially reasonable efforts to provide such information and execute such documents as Consumers Energy Company, in its capacity as distribution provider, may reasonably request in order to finalize the Consumers Interconnection Agreements for execution by the Parties at Closing.

(c) During the Interim Period, the Parties shall use commercially reasonable efforts to provide such information and execute such documents as METC and MISO may reasonably request in

order to facilitate the transfer and assignment from Seller to Purchaser of the Hardy Interconnection Agreement at Closing.

(d) During the Interim Period, the Parties shall use commercially reasonable efforts to provide such information and execute such documents as MISO may reasonably request in order to facilitate the transfer of the CPNodes for each of the Projects from Seller to Purchaser, such transfer to be effective as of the Closing Date.

Section 7.15. Excluded Permits and Licenses; Seller Required Consents after Closing.

(a) Excluded Permits and Licenses. During the Interim Period, Purchaser shall use commercially reasonable efforts to apply for, negotiate, finalize and obtain replacement Permits or licenses to be effective after Closing for each of the Permits described in **clause (a)** of the definition of Excluded Permits and the Excluded Shoreline Licenses. Seller shall use commercially reasonable efforts to facilitate such efforts, including providing reasonably requested information, and addressing any reasonable requests or requirements from such third parties needed to facilitate such applications or negotiations. Purchaser shall keep Seller informed of the progress and any material developments related to replacements for such Excluded Permits and Excluded Shoreline Licenses. After Closing, Purchaser shall use commercially reasonable efforts to apply for, negotiate, finalize and obtain replacement Permits or licenses for any such Excluded Permits or Excluded Shoreline Licenses which Purchaser was unable to replace on or prior to the Closing.

(b) Seller Required Consents After Closing. As soon as practicable, after the Closing Date, the Parties shall use commercially reasonable efforts to take such actions and execute such documents as may reasonably be required to obtain any Seller Required Consents not obtained as of the Closing Date with respect to any Material Permits and Material Environmental Permits.

Section 7.16. Disclosure Schedules Updates.

(a) Notwithstanding anything to the contrary in this Agreement, Seller may, on or prior to the date that is ten (10) Business Days prior to the Closing, by written notice to Purchaser, supplement or amend the Disclosure Schedules delivered by Seller to Purchaser on the Effective Date to include (i) such matters occurring prior to the Effective Date but first known to Seller after the Effective Date that would cause the failure of the condition precedent set forth in **Section 4.1(c)** and (ii) such matters or information first occurring after the Effective Date that, if existing, occurring or known on or before the Effective Date, would have been required to be set forth or described in the Disclosure Schedule (each, a "Disclosure Schedule Update").

(b) In the event any Disclosure Schedule Update (other than any Permitted Disclosure Schedule Update), individually or in the aggregate with any other Disclosure Schedule Updates (other than Permitted Disclosure Schedule Updates), results in or would reasonably be expected to result in a Disclosure Loss in excess of One Million Dollars ($1,000,000) but less than Five Million Dollars ($5,000,000), the Parties shall proceed with the Closing (subject to the satisfaction or waiver of the conditions precedent to the Closing), and if the Closing occurs then the Parties in good faith shall mutually agree on the aggregate amount of such Disclosure Loss, and effective as the Closing Date the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement; *provided*, that the aggregate amount of such Disclosure Loss shall apply towards the Liability Cap.

(c) In the event any Disclosure Schedule Update (other than a Permitted Disclosure Schedule Update), individually or in the aggregate with any other Disclosure Schedule Updates (other than any Permitted Disclosure Schedule Updates), would result in or would reasonably be expected to

result in a Disclosure Loss in excess of Five Million Dollars ($5,000,000), then Purchaser may elect, in its sole discretion, to terminate this Agreement by written notice to Seller on or before the date that is ten (10) Business Days from the date on which Purchaser received such Disclosure Schedule Update; *provided*, that if Purchaser does not elect to terminate this Agreement in accordance with this **Section 7.16(c)** within such ten (10) Business Day period, the Parties shall proceed with the Closing (subject to the satisfaction or waiver of the conditions precedent to the Closing), and if the Closing occurs the Parties shall in good faith mutually agree on the aggregate amount of such Disclosure Loss (which in no event shall exceed Twenty Million Dollars ($20,000,000)), and effective as of the Closing Date the PPA Price shall be adjusted by such amount pursuant to the Power Purchase Agreement; *provided further*, that the aggregate amount of such Disclosure Loss shall apply towards the Liability Cap.

(d) For the avoidance of doubt, unless and until the Disclosure Loss with respect to any Disclosure Schedule Updates (other than Permitted Disclosure Schedule Updates) equal or exceed One Million Dollars ($1,000,000), no Disclosure Schedule Update shall result in any adjustment to the PPA Price.

(e) For purposes of this Agreement, (i) a "Permitted Disclosure Schedule Update" shall mean a Disclosure Schedule Update as to matters or information with respect to: (A) any Casualty, Casualty Losses, Condemnation or Condemnation Losses for which Seller previously provided notice to Purchaser in accordance with **Section 4.3**, **Section 4.4**, **Section 7.7(b)** or **Section 7.7(c)** or for which Purchaser consented to in accordance with **Section 7.7(d)**; (B) entering into the EGLE Joint Funding Agreements or new collection agreement for which Seller has obtained Purchaser's consent in accordance with **Section 7.7(b)(iii)** or **Section 7.7(b)(iv)**, respectively; (C) any actions by Seller for which Purchaser consented to in accordance with **Section 7.7(d)** solely to the extent Seller's actions were consistent with the terms of such consent and otherwise with the terms of this Agreement; (D) any Title Commitment or Survey, including any exceptions (including Purchaser Title Objections) referenced therein; (E) entering into any retention incentive agreements and/or individual retention and transfer forfeiture agreement with the Transferred Employees to the extent the terms of such agreements are not binding on Purchaser and Seller's hiring of any Union Employee or Non-Union Employee for any vacant position (either disclosed as vacant on the Effective Date on **Schedule 5.16(a)** or **Schedule 5.16(b),** or otherwise vacated during the Interim Period); (F) changes to the Non-Union Employees or Union Employees listed in **Part I** of **Schedule 5.16(a)** or **Part I** of **Schedule 5.16(b)**, including changes to reflect the filling of vacant positions listed thereon and any ordinary course changes to any such scheduled employee's job title, salary, wage or other census information Made Available to Purchaser; or (G) any action taken by Seller by the express terms of this Agreement to satisfy a condition precedent to Closing pursuant to **Section 4.1** or **Section 8.2** (and only to the extent such actions are taken consistent with the terms of this Agreement); and (ii) a "Disclosure Loss" shall mean Losses incurred or suffered by any Purchaser Indemnified Party for claims arising from, related to or suffered as a result of (whether sounding in contract, tort, statute, or whether at Law or in equity, or otherwise) any breach of any representation or warranty made by Seller in the certificate delivered pursuant to **Section 8.2(c)(ii)** which are not covered in full or in part by the R&W Policy.

Section 7.17. Retention of and Access to Books and Records.

(a) Prior to or at the Closing, Seller shall use commercially reasonable efforts to deliver to Purchaser all Books and Records in its possession or control.

(b) Within five (5) Days following the Closing, Seller shall deliver to Purchaser all keys in Seller's possession to all locks on the Project Assets.

(c) From and after the Closing, Seller agrees to retain all Books and Records remaining in Seller's possession or control after the Closing in a manner consistent with Seller's records retention policy. Upon the reasonable request of Purchaser for any Books and Records not otherwise Made Available to Purchaser prior to or at the Closing, Seller shall, if such Books and Records have not been destroyed consistent with Seller's record retention policy, use commercially reasonable efforts to deliver such Books and Records to Purchaser promptly following such request.

Section 7.18. Support Obligations. With respect to each Support Obligation issued by or for the account of Seller or any of its Affiliates under the Project Contracts and Project Permits or Material Environmental Permits that is listed on **Schedule 5.19** (collectively, the "Existing Support Obligations"), Purchaser shall use commercially reasonable efforts to issue or obtain, concurrent with the Closing, a replacement Support Obligation in accordance with the requirements of the respective Material Contract, Material Permit or Material Environmental Permit (the "Replacement Support Obligation"), such that any Existing Support Obligations delivered by Seller and its Affiliates shall be returned and cancelled. To the extent Replacement Support Obligations are not issued or obtained in respect of any Existing Support Obligations as of the Closing (each, an "Outstanding Support Obligations"), then, from and after Closing, Purchaser shall: (a) continue to use commercially reasonable efforts to issue or obtain Replacement Support Obligations in respect of each Outstanding Support Obligation in accordance with the requirements of this **Section 7.18** no later than sixty (60) Days after the Closing Date; and (b) indemnify, defend, reimburse and hold harmless Seller and its Affiliates from and against any and all Losses incurred or suffered by Seller or its Affiliates arising from, related to or suffered as a result of such Outstanding Support Obligations.

ARTICLE 8

CLOSING

Section 8.1. Closing Date. The Closing shall be conducted by the Escrow Agent through a customary escrow arrangement, to be effective as of 11:59 p.m. (Eastern time) on the Closing Date. Once the Closing Date is known by the Parties, the Parties shall promptly provide written notification to the Escrow Agent of the Closing Date, and each Party shall promptly execute an escrow agreement acceptable to the respective Party and the Escrow Agent, which shall contain reasonable terms and conditions customary for the transactions contemplated by this Agreement (the "Escrow Agreement"). Prior to the Closing Date, the Parties shall execute and deliver to the Escrow Agent the items required to be delivered by them at the Closing pursuant to **Section 8.2** and **Section 8.3**. The Escrow Agent shall coordinate the Closing with any other applicable Title Company.

Section 8.2. Seller's Deliveries. At the Closing, Seller shall deliver or cause to be delivered each of the following items, into escrow, executed and acknowledged to the extent appropriate:

(a) The Deeds, substantially in the forms attached hereto as **Exhibit E-1**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(b) A Bill of Sale and General Assignment, substantially in the form attached hereto as **Exhibit F**, dated as of the Closing Date, executed by a duly authorized representative of Seller, including all transfer documentation in respect of the Project Assets as may be reasonably requested by Purchaser and any applicable documentation required to transfer title to any vehicle or boat as may be required by Michigan Law;

(c) A certificate, substantially in the form attached hereto as **Exhibit J-2**, dated as of the Closing Date, executed by a duly authorized representative of Seller, certifying as to the matters set forth in (i) **Section 4.1(a)**, (ii) **Section 4.1(b)** and (iii) **Section 4.1(c)**;

(d) A certificate of non-foreign status as contemplated under Section 1.445-2(b)(2) of the Treasury Regulations, in form and substance reasonably satisfactory to Purchaser, certifying that Seller (or if Seller is a "disregarded entity" within the meaning of Section 1.1445-2(b)(2)(iii) of the Treasury Regulations, the Person treated as the "owner" of Seller (as defined in such Treasury Regulation)) is not a foreign person;

(e) Copies of all Books and Records required to be delivered in accordance with **Section 7.17(a)**;

(f) Copies of all Seller Required Consents, except as otherwise provided on **Schedule 5.5**;

(g) A certificate, substantially in the form of **Exhibit J-1**, dated as of the Closing Date, executed by a duly authorized representative of Seller, certifying that attached thereto is: (i) a true, accurate and complete copy of a certificate of good standing with respect to Seller, issued by the Secretary of State of the State of Michigan as of a recent date prior to the Closing Date and certifying that Seller is validly existing and in good standing under the Laws of the State of Michigan; (ii) a true, accurate and complete copy of the certificate of incorporation of Seller, as in effect on the Closing Date, certified by the Secretary of State of the State of Michigan as of a recent date prior to the Closing Date; (iii) a true, accurate and complete copy of the resolutions authorizing the execution, delivery and performance by Seller of this Agreement and the Ancillary Agreements to which it is a party, and that such resolutions are in full force and effect as of the Closing Date; and (iv) the incumbency of Seller's officers and representatives that executed this Agreement, the Ancillary Agreements, any other agreement delivered on the Closing Date, and any certificate delivered in connection with the Closing;

(h) (i) An Owner's Affidavit, substantially in the form attached hereto as **Exhibit K**, dated as of the Closing Date, executed by a duly authorized representative of Seller, (ii) such evidence or documents (including consents, authorizations, or approvals) as may be reasonably required by the Title Company relating to the status and capacity of Seller and the authority of the Person or Persons who are executing the various documents on behalf of Seller in connection with the sale of the Fee Simple Real Property, and (iii) any document, affidavit, or instrument reasonably required by Title Company in connection with issuance of the Title Policy, conveyance of fee title to the Fee Simple Real Property and Residential Fee Simple Real Property, or recordation of the Deeds (including real estate transfer valuation affidavits but excluding any indemnification or similar agreements);

(i) A copy of a release, in recordable form, releasing the Project Assets from the Trust Indenture;

(j) The Assignment and Assumption of Real Property Agreements, substantially in the form attached hereto as **Exhibit H**, dated as of the Closing Date, executed by a duly authorized representative of Seller for the Real Property Agreements that are freely transferable;

(k) Each of the Consumers Interconnection Agreements, substantially in the form attached hereto as **Exhibit S**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(l) The Transition Services Agreement, substantially in the form attached hereto as **Exhibit P**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(m) The Regulatory Disallowance Agreement, substantially in the form attached hereto as **Exhibit T**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(n) The Environmental Indemnity Agreement, substantially in the form attached hereto as **Exhibit M-1**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(o) The Memorandum of Environmental Indemnity Agreement, substantially in the form attached here to as **Exhibit M-2,** dated as of the Closing Date, executed by a duly authorized representative of Seller;

(p) The Memorandum of Understanding, substantially in the form attached hereto as **Exhibit W-1**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(q) A properly completed and executed IRS Form W-9 of Seller, executed by a duly authorized representative of Seller;

(r) Any Tax Compliance Certificate requested by Purchaser pursuant to **Section 8.5(b)**;

(s) The Temporary Substation Easements, substantially in the form attached hereto as **Exhibit C**, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(t) All other Ancillary Agreements to which Seller is a party, dated as of the Closing Date, executed by a duly authorized representative of Seller;

(u) The Residential Fee Simple Real Property Deed, substantially in the form attached hereto as **Exhibit E-2**, dated as of the Closing Date, executed by a duly authorized representative of Seller; and

(v) Such other documents and instruments as may be reasonably requested by Purchaser, without additional liability exposure or expenditure to or by Seller or the Title Company to complete the transactions contemplated by this Agreement.

Section 8.3. Purchaser's Deliveries. At the Closing, Purchaser shall deliver or cause to be delivered to Seller each of the following items, into escrow, executed and acknowledged by Purchaser to the extent appropriate:

(a) The Closing Payment, in accordance with **Section 2.2(c)**;

(b) A Bill of Sale and General Assignment, substantially in the form attached hereto as **Exhibit F**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser and any applicable documentation required to transfer title to any vehicle or boat as may be required by Michigan Law;

(c) A certificate, substantially in the form attached hereto as **Exhibit L-2**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser, certifying as to the matters set forth in **Section 4.2(a)** and **Section 4.2(b)**;

(d) Copies of all Purchaser Required Consents and Purchaser Regulatory Approvals;

(e) A certificate, substantially in the form attached hereto as **Exhibit L-1**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser, certifying that attached thereto is: (i) a true, correct and complete copy of a certificate of good standing with respect to Purchaser, issued by the Secretary of State of the State of Delaware as of a recent date prior to the Closing Date; (ii) a true, accurate and complete copy of the certificate of formation of Purchaser, as in effect on the Closing Date, certified by the Secretary of State of the State of Delaware as of a recent date prior to the Closing Date; (iii) a true, accurate and complete copy of the resolutions of the managing member of Purchaser authorizing the execution, delivery and performance by Purchaser of this Agreement and the Ancillary Agreements to be executed and delivered by Purchaser in connection with this Agreement, and that such resolutions are in full force and effect as of the Closing Date; and (iv) the incumbency of Purchaser's officers and representatives that executed this Agreement, the Ancillary Agreements, any other agreement delivered on the Closing Date, and any certificate delivered in connection with the Closing;

(f) The Assignment and Assumption of Real Property Agreements, substantially in the form attached hereto as **Exhibit H** dated as of the Closing Date, executed by a duly authorized representative of Purchaser for those Real Property Agreements which are freely transferable;

(g) Each of the Consumers Interconnection Agreements, substantially in the form attached hereto as **Exhibit S**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser (or the applicable Subsidiary);

(h) The Transition Services Agreement, substantially in the form attached hereto as **Exhibit P**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser;

(i) The Regulatory Disallowance Agreement, substantially in the form attached hereto as **Exhibit T**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser;

(j) The Environmental Indemnity Agreement, substantially in the form attached hereto as **Exhibit M-1**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser and each of the Subsidiaries;

(k) The Memorandum of Environmental Indemnity Agreement, substantially in the form attached here to as **Exhibit M-2**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser and each of the Subsidiaries;

(l) Confirmation that the PLLI has been bound together with evidence of the payment of fees and premiums which are a condition to the effectiveness of same;

(m) The Memorandum of Understanding, substantially in the form attached hereto as **Exhibit W-1**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser;

(n) Confirmation that Purchaser shall have delivered the Union Notice, substantially in the form attached hereto as **Exhibit W-2**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser;

(o) The Temporary Substation Easements, substantially in the form attached hereto as **Exhibit C**, dated as of the Closing Date, executed by a duly authorized representative of Purchaser (or the applicable Subsidiary);

(p) All other Ancillary Agreements to which Purchaser or any of its Affiliates are a party, dated as of the Closing Date, executed by a duly authorized representative of Purchaser or its Affiliates, as applicable;

(q) Such evidence or documents as may reasonably be required by the Title Company, including such resolutions which evidence the status and capacity of Purchaser and the authority of the Person or Persons who are executing the various documents described herein on behalf of Purchaser in connection with the purchase of the Project Assets; and

(r) Such other documents and instruments as may be reasonably requested by Seller, without additional liability exposure or expenditure to or by Purchaser or the Title Company to complete the transactions contemplated by this Agreement.

Section 8.4. Costs and Prorations.

(a) General. Property Taxes and assessments, utility expenses and Lease payments with respect to the Project Assets shall be prorated between Seller and Purchaser as of the Closing Date in accordance with this **Section 8.4**. Except as otherwise provided in this **Section 8.4**, Property Taxes and assessments, utility expenses and Lease payments ("Prorated Costs") shall be prorated on an accrual basis. All such Prorated Costs attributable to the period prior to the Closing Date shall be allocated to Seller, and all such Prorated Costs attributable to the period commencing on the Closing Date shall be allocated to Purchaser. Any Prorated Costs paid by Seller prior to the Closing Date which are attributable to the period following the Closing Date shall result in a dollar-for-dollar upward adjustment of the Purchase Price in an amount equal to the total of such Prorated Costs ("Seller Proration Credits"). Any Prorated Costs paid by Purchaser prior to the Closing Date which are attributable to the period prior to the Closing Date shall result in a dollar-for-dollar downward adjustment of the Purchase Price in an amount equal to the total of such Prorated Costs ("Purchaser Proration Credits"). To the extent any Prorated Costs remain outstanding or arise after the Closing Date, and such Prorated Costs are attributable to the period prior to the Closing Date, Purchaser may pay such Prorated Costs in which case such Prorated Costs shall result in a dollar-for-dollar downward adjustment of the Purchase Price in an amount equal to the total of such Prorated Costs (the "Purchaser Post-Closing Credits"). Purchaser may invoice Seller from time to time for any Purchaser Post-Closing Credits, *provided* that each invoice shall include reasonable documentation of the Purchaser Post-Closing Credits and Purchaser's payment of the same. Seller shall pay any Purchaser Post-Closing Credits within thirty (30) Days of receipt of an invoice from Purchaser. All apportionments and prorations made hereunder shall be made based on the number of Days of ownership of the Project Assets in the period applicable to the apportionment. All adjustments and prorations shall be done without duplication. The provisions of this **Section 8.4** shall survive the Closing.

(b) Property Taxes.

(i) All personal property taxes, real property taxes, or similar ad valorem Taxes with respect to the Project Assets, other than special assessments as addressed in **Section 8.4(c)** (collectively, the "Property Taxes"), shall be prorated at the Closing as follows and as set forth in **Schedule 8.4(b)(i)(C)**, *provided*, *however*, to the extent any Property Taxes are not identified by the Parties at the Closing, such Property Taxes shall be prorated between the Parties and the Parties shall be responsible for such Property Taxes as follows:

(A) Any such Property Taxes shall be deemed to cover the calendar year in which the applicable Property Tax becomes a Lien on the Project Assets (the "Lien Date", i.e., July 1 for summer Taxes and December 1 for winter Taxes).

(B) Any such Property Taxes for which the Lien Date occurs in calendar years prior to the calendar year of the Closing shall be paid by Seller in full prior to the Closing without any charge to, reimbursement from or proration with Purchaser.

(C) In accordance with **Schedule 8.4(b)(i)(C)**, any such Property Taxes for which the Lien Date occurs in the calendar year of the Closing shall be paid by Purchaser or Seller, and prorated between Purchaser and Seller as of the Closing Date, with Seller being responsible for the share of Property Taxes applicable to the period of its ownership up to and including the Closing Date and Purchaser responsible for the Taxes applicable to the period of Purchaser's ownership after the Closing Date.

(D) For the avoidance of doubt, any Property Taxes paid by Purchaser in accordance with **Section 8.4(b)(i)(C)** for which Seller is responsible shall be included as a Purchaser Proration Credit or Purchaser Post-Closing Credit, as applicable, and shall operate as a dollar-for-dollar downward adjustment to the Purchase Price. For the avoidance of doubt, any Property Taxes paid by Seller in accordance with this **Section 8.4(b)(i)(C)** for which Purchaser is responsible shall be included as a Seller Proration Credit and shall operate as a dollar-for-dollar upward adjustment to the Purchase Price.

(ii) With respect to any prorations with respect to any Property Taxes, if the most recent Property Tax bill received by Seller before the Closing Date is not the actual current Property Tax bill, then Seller and Purchaser shall prorate the Property Taxes at the Closing by applying one hundred percent (100%) of the Property Tax rate for the period covered by the most current available Property Tax bill to the latest assessed value. Any refunds of Property Taxes made after the Closing shall first be applied to the unreimbursed third-party costs incurred by Seller or Purchaser in obtaining the refund, then paid to Seller (for the period prior to the Closing Date) and to Purchaser (for the period commencing on and after the Closing Date).

(c) Assessment Installments. If there are special assessments pending against any Project Assets, Seller shall pay any installments of such special assessments that are due and payable prior to the Closing Date and Purchaser shall pay all installments of such special assessments on or after the Closing Date, with each Party responsible for such special assessments applicable to the period of such Party's ownership. For the avoidance of doubt, any installments paid by Purchaser on or after the Closing Date which apply to pre-Closing periods shall be included as a Purchaser Proration Credit or Purchaser Post-Closing Credit, as applicable, and shall operate as a dollar-for-dollar downward adjustment to the Purchase Price. For the avoidance of doubt, any installments paid by Seller on or after the Closing Date which apply to post-Closing periods shall be included as a Seller Proration Credit and shall operate as a dollar-for-dollar upward adjustment to the Purchase Price.

(d) Transfer Taxes. Notwithstanding anything in this Agreement to the contrary, at the Closing, any Transfer Taxes shall be paid by Seller and Purchaser in equal proportion. The Party required by applicable Law shall, at its own expense, timely file any Tax Return or other document with

respect to such Transfer Taxes and, if required by applicable Law, the other Party will join in the execution of any such Tax Returns and other documentation.

(e) Utilities. To the extent the Project Assets are served by any utilities as of the Closing, final readings and final billings for utilities will be made, if possible, as of the Closing Date, in which event no proration shall be made at the Closing with respect to utility bills; otherwise, a proration shall be made based upon the Parties' reasonable good faith estimate. Notwithstanding the foregoing, Purchaser shall not receive any credit for utility payments due after the Closing to the extent that (i) tenants are obligated under the Leases to pay such amounts, (ii) such amounts are due after the Closing, and (iii) Seller has not received any payments for such amounts. For the avoidance of doubt, to the extent (x) Purchaser pays any utility payments after the Closing Date for costs, expenses and fees incurred, and for services received, prior to the Closing Date, such amounts shall be included as a Purchaser Proration Credit and shall operate as a dollar-for-dollar downward adjustment to the Purchase Price and (y) Seller pays any utility payments on or before the Closing Date for costs, expenses and fees incurred, and for services received, on or after the Closing Date, such amounts shall be included as a Seller Proration Credit and shall operate as a dollar-for-dollar upward adjustment to the Purchase Price.

(f) Closing Costs.

(i) In connection with Closing, Seller shall pay the following costs: (A) survey costs for the Reserved Easements; (B) fifty percent (50%) of the Title Company's customary escrow charges; (C) the fees of its own attorneys; (D) Seller's costs and expenses and fees associated with the FERC Approvals and the MPSC Approval; (E) fifty percent (50%) of all Transfer Taxes in accordance with **Section 8.4(d)**; (F) fifty percent (50%) of all filling fees associated with the HSR Approval; and (G) all of the costs and expenses incurred by Seller in connection with this Agreement and the transactions contemplated hereby which are expressly Seller's obligation.

(ii) In connection with Closing, Purchaser shall pay the following costs: (A) all costs associated with its due diligence, including the cost of Surveys, appraisals, architectural, engineering, credit and updated physical condition and environmental reports that Purchaser orders; (B) the cost of (1) the Title Policy; (2) any affirmative coverage or any endorsements thereto; and (3) any search and exam fees related to a new Title Commitment ordered by Purchaser, if any; (C) charges for any lender's title insurance policies, if any, and all other costs and expenses associated with any Purchaser financing; (D) fifty percent (50%) of the Title Company's customary escrow charges; (E) the fees of its own attorneys; (F) the costs and expenses and fees associated with the Governmental Approvals as set forth in **Section 7.12(b)** and Purchaser's costs and expenses and fees associated with the FERC Approvals and the MPSC Approval; (G) all costs and expenses and fees associated with PLLI; (H) one hundred percent (100%) of all costs and expenses related to the R&W Policy (including the total premium, deductibles, underwriting costs, brokerage commissions and other fees and expenses); (I) fifty percent (50%) of all Transfer Taxes in accordance with **Section 8.4(d);** (J) fifty percent (50%) of all filling fees associated with the HSR Approval; and (K) all of the costs and expenses incurred by Purchaser in connection with this Agreement and the transactions contemplated hereby which are expressly Purchaser's obligation.

(g) For purposes of rent prorations, all rent for each Lease shall be prorated on the basis of the term of that particular Lease (referred to as a "Lease Year"). All rent for each Lease Year in which the Closing occurs, which is actually collected from the tenant, will be prorated as provided in this **Section 8.4(g)**. Seller and Purchaser shall each be entitled to rents attributable to the period of their

respective ownership of the Project Assets. Purchaser shall receive a credit for those rents already collected by Seller attributable to the period starting on the Closing Date with respect to the Project Assets and lasting for the balance of said Lease Year and for any and all pre-paid rents attributable to periods after the Closing Date. For purposes of calculating rent prorations, the per diem base rent amount shall be calculated as the total base rent for the Lease Year divided by the number of Days in that Lease Year. To the extent Purchaser thereafter receives unpaid rents for the Lease Years in which the Closing occurs or for prior periods (including any utility charges owing to Seller), Purchaser shall pay Seller the portion allocable to the period on or prior to the Closing Date, as and when collected by Purchaser. To the extent Seller thereafter receives unpaid rents for the Lease Year in which the Closing occurs or for prior periods (including any utility charges owing to Seller), Seller shall pay Purchaser the portion allocable to the period after the Closing Date, as and when collected by Seller. Purchaser agrees to bill tenants under the Leases for all past due rents and to take its customary actions to collect rents that are accrued but unpaid as of the Closing; *provided*, *however*, that Purchaser shall have no obligation to terminate any Lease or pursue eviction or other legal proceedings against any tenant in connection with the collection of such delinquent rents due Seller. Purchaser shall receive a credit for all security deposits for which Purchaser will be accountable after the Closing.

(h) Obligations set forth in the EGLE Joint Funding Agreements (the "EGLE Funding Obligations") shall be prorated at the Closing as follows:

(A) Each EGLE Funding Obligation shall be deemed to cover the fiscal year beginning October 1 and ending September 30 in which the applicable EGLE Funding Obligation is effective, regardless of when, or if, the applicable EGLE Joint Funding Agreement is executed (the "EGLE Funding Period").

(B) If the EGLE Funding Obligation for such EGLE Funding Period has not been provided or is not available, the EGLE Funding Obligation for such EGLE Funding Period shall be deemed for purposes of the proration in accordance with this **Section 8.4(h)** to be equal to the EGLE Funding Obligation applicable to the immediately preceding EGLE Funding Period for which such obligation amount is available.

(C) Any EGLE Funding Obligation for which the entire EGLE Funding Period occurs prior to the Closing shall be paid by Seller in full prior to the Closing without any charge to, reimbursement from or proration with Purchaser. If the Closing occurs during an EGLE Funding Period, the applicable EGLE Funding Obligation for such EGLE Funding Period shall be paid by Purchaser or Seller, and prorated between Purchaser and Seller as of the Closing Date, with Seller being responsible for the share of EGLE Funding Obligation applicable to the period of its ownership up to and including the Closing Date and Purchaser responsible for the EGLE Funding Obligation applicable to the period of Purchaser's ownership after the Closing Date, each determined by dividing the EGLE Funding Obligation by the number of calendar days in the appliable EGLE Funding Period.

(D) For the avoidance of doubt, to the extent (i) Purchaser pays any EGLE Funding Obligation for which Seller is responsible, such amounts shall be included as a Purchaser Proration Credit or Purchaser Post-Closing Credit, as applicable, and shall operate as a dollar-for-dollar downward adjustment to the Purchase Price and (ii) Seller pays any EGLE Funding Obligation for which Purchaser is responsible, such amounts shall be included as a Seller Proration

Credit and shall operate as a dollar-for-dollar upward adjustment to the Purchase Price.

Section 8.5. Tax Matters.

(a) The Parties (and their respective Affiliates) shall cooperate, as and to the extent reasonably requested by the other Party, in connection with any matter with respect to Taxes with respect to the Project Assets. Such cooperation shall include the retention and (upon the other Party's request) the provision of records and information that are reasonably relevant to any such Tax matter and making employees reasonably available on a mutually convenient basis to provide additional information and explanation of any material provided hereunder. Seller agrees to retain all material Books and Records with respect to Tax matters pertinent to the Project relating to Pre-Closing Tax Periods until the expiration of the statute of limitations (and, to the extent notified by Purchaser, any extensions thereof) applicable thereto and to abide by all record retention agreements entered into with any Tax authority. Further, Seller agrees to give Purchaser reasonable written notice prior to transferring, destroying or discarding any such Books and Records and, upon the reasonable request of Purchaser, shall allow Purchaser to make copies of such Books and Records.

(b) At Purchaser's request, Seller shall take all actions reasonably necessary to comply with the requirements of any applicable Tax clearance certificate procedures of each jurisdiction in which any Project or Project Asset is situated or in which any business related thereto is conducted, including the filing of any Tax exemption or Tax clearance certificates as Purchaser may request (each, a "Tax Compliance Certificate"). Seller shall promptly deliver to Purchaser a copy of all certificates and other documents filed with a Governmental Authority pursuant to this **Section 8.5(b)**. If any Governmental Authority asserts that Seller is liable for any Tax, Seller shall promptly pay or in good faith contest any and all such amounts and shall provide evidence to Purchaser that such liabilities have been paid in full or otherwise satisfied or contested.

(c) Except as otherwise provided in **Section 8.4(d)**, (i) Seller shall prepare or cause to be prepared and file or cause to be filed all Tax Returns required to be filed by Seller under applicable Law with respect to the Project Assets and the Projects for all Pre-Closing Tax Periods; and (ii) Purchaser shall file all Tax Returns required to be filed by Purchaser under applicable Law with respect to the Project Assets and the Projects for all Post-Closing Tax Periods.

(d) With respect to the preparation and filing of employment Tax Returns, Seller and Purchaser will follow the "Standard Procedure" specified in Rev. Proc. 2004-53, 2004-2 C.B. 320, Section 4, whereby, among other things, Purchaser will be responsible for and perform all employment Tax withholding, payment and reporting duties with respect to any wages and other compensation paid by Purchaser to employees who continue employment with Purchaser following the Closing Date and Seller will be responsible for and perform all employment Tax withholding, payment and reporting duties with respect to any wages and other compensation paid by Seller.

ARTICLE 9

INDEMNIFICATION

Section 9.1. Survival. Notwithstanding anything in this Agreement to the contrary, the Parties, intending to modify any applicable statute of limitations agree that, except for Seller's indemnification obligations under **Section 9.2(d)**, which shall survive Closing for a period of two (2) years: (a) the representations and warranties of Seller contained in **ARTICLE 5** and in any certificate delivered pursuant to this Agreement shall not survive Closing and shall terminate at Closing, and Seller shall have

no Liability after the Closing for any inaccuracy therein or breach thereof, (b) the representations and warranties of Purchaser contained in **ARTICLE 6**, and in any certificate delivered pursuant to this Agreement shall survive Closing for a period of twelve (12) months, (c) the obligations contained in this Agreement that are to be performed prior to Closing shall survive Closing for a period of twelve (12) months, and (d) the obligations contained in this Agreement that are to be performed at or after the Closing shall survive the Closing in accordance with their respective terms or, if no survival term is specified, then until fully performed (*provided*, that the foregoing shall not limit (i) any claim or recovery that may be available to Purchaser under the R&W Policy or (ii) any claim of Fraud committed by a Party in connection with the transactions contemplated by this Agreement).

Section 9.2. **Indemnity by Seller**. From and after the Closing Date, and subject to the limitations set forth in **ARTICLE 10**, Seller shall indemnify, defend, reimburse and hold harmless Purchaser and Purchaser's Affiliates, together with their respective members, shareholders, managers, directors, officers, employees, agents, advisors, attorneys, accountants and consultants (each a "Purchaser Indemnified Party") from and against any and all Losses incurred or suffered by any Purchaser Indemnified Party for claims arising from, related to or suffered as a result of any of the following (whether sounding in contract, tort, statute, or whether at Law or in equity, or otherwise):

(a) any breach of, or failure to perform, any obligation of Seller contained in this Agreement;

(b) any Excluded Liabilities;

(c) (i) any and all Liability for Taxes to which the Project Assets may be subject, assessed or otherwise encumbered with respect to any Pre-Closing Tax Period, (ii) any and all Liability for Taxes of Seller or any of its Affiliates or direct or indirect partners, shareholders or members, or (iii) Taxes of any Person imposed on Seller as a transferee or successor or by contract, which Taxes relate to an event or transaction occurring before the Closing; and

(d) any and all Liability arising out of, or related to, the real property "exceptions" referenced on **Schedule 5.6(e)** and identified in the current project boundary map for the Croton Project and identified in section 15, T.12.N., R.11.W, Croton Township, Newaygo County, Michigan, of the Exhibit G-1 Project Area Map (FERC No. 2468-5) approved by FERC order dated June 23, 1995 (71 FERC ¶ 62,216 (1995)).

Section 9.3. **Indemnity by Purchaser**. From and after the Closing Date, Purchaser shall indemnify, defend, reimburse and hold harmless Seller and Seller's Affiliates, together with their respective members, shareholders, managers, directors, officers, employees, agents, advisors, attorneys, accountants and consultants (each a "Seller Indemnified Party") from and against any and all Losses incurred or suffered by any Seller Indemnified Party for claims arising from, related to or suffered as a result of any of the following (whether sounding in contract, tort, statute, or whether at Law or in equity, or otherwise):

(a) any breach of any representation or warranty made by Purchaser in this Agreement or in any certificate delivered pursuant to this Agreement;

(b) any breach of, or failure to perform, any obligation of Purchaser contained in this Agreement;

(c) any Assumed Liabilities (other than Assumed Environmental Liabilities which are addressed exclusively in the Environmental Indemnity Agreement); and

(d) (i) any and all Liability for Taxes to which the Project Assets may be subject, assessed or otherwise encumbered with respect to any Post-Closing Tax Period, (ii) any and all Liability for Taxes of Purchaser or any of its Affiliates or direct or indirect partners, shareholders or members, or (iii) Taxes of any Person imposed on Purchaser as a transferee or successor or by contract, which Taxes relate to an event or transaction occurring at or after the Closing (collectively, "Purchaser Taxes"); *provided*, *however*, that "Purchaser Taxes" shall not include (x) any Seller Taxes; (y) any Taxes described in **Section 9.2(c)**; or (z) any Taxes resulting from or attributable to any breach or inaccuracy of any representation or warranty contained in **Section 5.9**.

Section 9.4. Claims for Indemnification. If Purchaser or Seller seeks indemnification under **Section 9.2** or **Section 9.3** (in either case, the "Indemnified Party"), then the Indemnified Party shall give written notice (a "Claim Notice") to the other Party from which it seeks indemnity pursuant to this **ARTICLE 9** (the "Indemnifying Party") as soon as practicable after the Indemnified Party becomes aware of any fact, condition or event which may give rise to Losses for which indemnification may be sought under this **ARTICLE 9** (a "Claim"). The failure of the Indemnified Party to give a Claim Notice to the Indemnifying Party hereunder shall not affect such Indemnified Party's rights to indemnification hereunder, except to the extent that the Indemnifying Party is materially prejudiced by such failure. Each Claim Notice shall state that such Indemnified Party believes that such Indemnified Party is entitled to indemnification, compensation or reimbursement under this **ARTICLE 9**, and contain a brief description of the circumstances supporting such belief that such Indemnified Party is so entitled to indemnification, compensation or reimbursement and shall, to the extent possible, contain a good faith, non-binding, preliminary estimate of the amount of Losses such Indemnified Party claims to have so incurred or suffered (the "Claimed Amount").

Section 9.5. Response Notice; Uncontested Claims. Within ten (10) Business Days after receipt by the Indemnifying Party of a Claim Notice, such Indemnifying Party may deliver to the Indemnified Party a written response (the "Response Notice") in which such Indemnifying Party: (a) agrees that the Indemnified Party is entitled to the full Claimed Amount; (b) agrees that the Indemnified Party is entitled to part, but not all, of the Claimed Amount (such amount agreed to under **Section 9.5(a)** or **Section 9.5(b)**, the "Agreed Amount"); or (c) indicates that the Indemnifying Party disputes the entire Claimed Amount. Any part of the Claimed Amount that is not agreed to pursuant to the Response Notice shall be the "Contested Amount." If a Response Notice is not received within such ten (10) Business Day period, then the Indemnifying Party shall be deemed to have disputed the entire Claimed Amount (such amount, also a "Contested Amount"). If the Parties are unable to resolve the dispute relating to any Contested Amount within sixty (60) Days after the delivery of the Response Notice, then the Parties shall be entitled to resort to any legal remedy available to such Parties to resolve such dispute.

Section 9.6. Setoff; Adjustment of PPA Price.

(a) In addition to any remedies provided herein or available to a Party hereunder, each Party shall have the right to setoff any Agreed Amount or other sum owed to it and any Purchaser Indemnified Party or Seller Indemnified Party (as appropriate) under this **ARTICLE 9** against any liability or other amount owed by it to any Purchaser Indemnified Party or Seller Indemnified Party (as appropriate) under this Agreement or any other Ancillary Agreement. The deduction of any such sum shall operate for all purposes as a complete discharge (to the extent of such sum) of the obligation to pay the amount from which such sum was withheld and deducted and will not constitute a default under this Agreement or any other Ancillary Agreement. Neither the exercise of, nor the failure to exercise, such right of setoff will constitute an election of remedies or limit a Party in any manner in the enforcement of any other remedies that may be available to it.

(b) Seller shall be permitted, but not required, to satisfy, in whole or in part, (i) any Agreed Amount or (ii) any other sum owed to Purchaser and any Purchaser Indemnified Party under this **ARTICLE 9** through an adjustment to the PPA Price pursuant to the Power Purchase Agreement, in which case the Parties in good faith shall mutually agree on the sum owed to Purchaser or the Purchaser Indemnified Party pursuant to **clause (ii)** above, and effective as of date Seller notifies Purchaser of its election pursuant to this **Section 9.6(b)** to satisfy, in whole or in part, any Agreed Amount or mutually agreed amount pursuant to **clause (ii)** above, the PPA Price shall be adjusted by the Agreed Amount or such amount, as the case maybe, pursuant to the Power Purchase Agreement.

Section 9.7. Third Person Claims.

(a) If any claim or demand in respect of which an Indemnified Party might seek indemnity under this **ARTICLE 9** is asserted against such Indemnified Party by a Person other than a Party (a "Third Party Claim"), the Indemnified Party shall give a Claim Notice, including copies of all relevant pleadings, documents and information, to the Indemnifying Party within fifteen (15) Business Days following the receipt of notice of the Third Party Claim by the Indemnified Party; *provided*, that, the failure to so notify the Indemnifying Party shall not relieve the Indemnifying Party of its obligations hereunder except to the extent that the Indemnifying Party is materially prejudiced by such failure. The Indemnifying Party shall have five (5) Business Days after its receipt of such Claim Notice (the "Third Party Claim Response Period"), within which to give notice to the Indemnified Party, in writing, either denying its obligations to, or agreeing to, indemnify and defend the Third Party Claim under this **ARTICLE 9**.

(b) If the Indemnifying Party notifies the Indemnified Party that it agrees to indemnify and defend the Indemnified Party against the Third Party Claim within the Third Party Claim Response Period, then the Indemnifying Party may assume the conduct and control through counsel reasonably acceptable to the Indemnified Party of the defense of such Third Party Claim and shall at its expense defend such Third Party Claim by all appropriate proceedings, which proceedings will be diligently prosecuted to a final conclusion or will be settled, and shall, subject to **ARTICLE 10**, pay all Losses of the Indemnified Party incurred or accrued and paid and resulting or arising from such Third Party Claim; *provided*, that, unless consented to by the Indemnified Party (which consent shall not be unreasonably withheld, conditioned or delayed), the Indemnifying Party shall not enter into any settlement that (i) does not fully, finally and unconditionally release the Indemnified Party from all Liability with respect to such Third Party Claims, (ii) requires a non-monetary commitment by the Indemnified Party, including but not limited to compliance with an injunction or other equitable relief, or (iii) could reasonably be expected to result in Losses (cumulative of all Losses to which the Indemnified Party may be entitled to under this **ARTICLE 9**) in excess of the limits set forth in **ARTICLE 10**. If the Indemnifying Party assumes the defense of such Third Party Claim, the Indemnifying Party shall be responsible for posting any bonds or other security required in connection with such Third Party Claim. The Indemnified Party will reasonably cooperate in such defense, including making available to the Indemnifying Party all records and documents reasonably requested in writing by the Indemnifying Party that are within the Indemnified Party's control or that the Indemnified Party can reasonably obtain relating to the Third Party Claim, and all costs or expenses incurred or accrued and paid by the Indemnified Party at the request of the Indemnifying Party shall be paid by the Indemnifying Party promptly as statements are received. An Indemnified Party, at its expense, may participate in, but not control, any defense or settlement of any Third Party Claim conducted by the Indemnifying Party pursuant to this **Section 9.7(b)** or take any other actions it reasonably believes to be necessary or appropriate to protect its interests.

(c) If (i) the Indemnifying Party fails to assume the defense of a Third Party Claim in accordance with **Section 9.7(b)** within the Third Party Claim Response Period, (ii) the Claim for indemnification relates to or arises in connection with any criminal proceeding, action, indictment,

allegation or investigation, (iii) the Third Party Claim seeks an injunction or equitable relief against the Indemnified Party, (iv) under applicable standards of professional conduct, a conflict of interest on any significant issue related to such proceeding exists between the Indemnifying Party, on the one hand, and an Indemnified Party, on the other hand, (v) the amount in controversy in such Third Party Claim is in excess of the liability limitations set forth in **ARTICLE 10**, (vi) the Third Party Claim related to Taxes, or (vii) the Third Party Claim is made by any Governmental Authority, then, in each case, upon notice to the Indemnifying Party, the Indemnified Party may, in its sole discretion, retain counsel satisfactory to it to assume such defense on behalf of and for the sole account and risk of the Indemnifying Party, and in the case of **clauses (i)** through **(vii)** the Indemnifying Party shall pay all reasonable fees and expenses of such counsel for the Indemnified Party, and the Indemnifying Party and the Indemnified Party shall cooperate in the defense of any such matter. In the event that the Indemnified Party assumes the conduct and control of the defense of a Third Party Claim, then the Indemnifying Party shall not be liable for any settlement effected without its prior written consent (which consent shall not be unreasonably withheld, conditioned or delayed).

(d) If the Indemnifying Party notifies the Indemnified Party that it acknowledges its obligation to indemnify and defend the Indemnified Party with respect to a Third Party Claim, or it is otherwise determined that the Indemnifying Party is obligated to indemnify and defend the Indemnified Party with respect to a Third Party Claim, the Losses of the Indemnified Party incurred or accrued and paid and resulting from or arising out of such Third Party Claim in the amount finally determined will be conclusively deemed a Loss under this **ARTICLE 9**, and the Indemnifying Party shall pay the full amount of such Losses to the Indemnified Party on demand subject to the limits set forth in **ARTICLE 10**.

Section 9.8. **Mitigation**. Notwithstanding anything to the contrary contained herein, each Indemnified Party will act in good faith to take commercially reasonable steps to mitigate all Losses that may be subject to indemnity hereunder.

Section 9.9. **Tax Treatment of Certain Post-Closing Payments**. Except as otherwise required by applicable Law, Seller, Purchaser and their respective Affiliates shall treat any and all payments under this **ARTICLE 9** as an adjustment to the Purchase Price for all Tax purposes.

ARTICLE 10

LIMITATION OF LIABILITY; LIMITED REMEDIES AND DAMAGES

Section 10.1. **Limitation of Liability**. Notwithstanding anything to the contrary in this Agreement, (a) no Party's aggregate liability for Losses arising out of or relating to this Agreement and the Ancillary Agreements, including any breach of representations, warranties, covenants, or obligations contained herein, including pursuant to **Section 9.2**, or **Section 9.3**, as applicable, shall exceed Twenty Million Dollars ($20,000,000) in the aggregate (the "Liability Cap"), (b) Seller's aggregate liability for Losses arising under **Section 9.2(d)** shall not exceed One Million Dollars ($1,000,000), and (c) except for claims pursuant to **Section 9.2**(c), no Party shall be entitled to seek a claim against the other Party unless such claim exceeds One Hundred Thousand Dollars ($100,000) (individually or in the aggregate), in which case once such threshold has been met, all Losses shall be indemnifiable hereunder; *provided*, *however*, that the limitations set forth in **clauses (a)**, **(b)** and **(c)** above shall not apply to the Regulatory Disallowance Agreement, the Interconnection Agreements, the Power Purchase Agreement or the Environmental Indemnity Agreement or otherwise limit or restrict in any respect Purchaser's Liability (or that of any other Person) under the Regulatory Disallowance Agreement, the Interconnection Agreements, the Power Purchase Agreement or the Environmental Indemnity Agreement, including in respect of Assumed Environmental Liabilities. Except in the event of Fraud and as provided in **Section 7.16**, Seller shall have no Liability whatsoever in respect of any and all Losses, detriment, or prejudice

however incurred or suffered by Purchaser or any of its Affiliates or other Purchaser Indemnified Parties as a result of any of Seller's representations and warranties contained in this Agreement, any Ancillary Agreement (excluding the Regulatory Disallowance Agreement, the Interconnection Agreements and the Power Purchase Agreement) or any certificate delivered pursuant to this Agreement, including for the avoidance of doubt in any circumstances where Purchaser is not able for any reason whatsoever to obtain coverage of representations and warranties or indemnity under the R&W Policy (including any failure to enter into the R&W Policy, refusal by R&W Insurer to indemnify, invalidity or ineffectiveness of the R&W Policy, breaches by Purchaser of provisions of the R&W Policy, wrong submission by Purchaser of claims under the R&W Policy, application of limitations such as de minimis, thresholds and/or caps, duration, exclusions, or any other reason). Purchaser hereby acknowledges that, after the Closing Date, except in the case of Fraud, the R&W Policy shall be the sole and exclusive source of recovery and remedy for any Losses sustained, suffered or incurred by the Purchaser Indemnified Parties resulting from any breach, misstatement, misrepresentation, inaccuracy or omission by Seller of the representations and warranties contained in this Agreement, any Ancillary Agreement (excluding the Regulatory Disallowance Agreement, the Interconnection Agreements and the Power Purchase Agreement) or in any certificate delivered pursuant to this Agreement.

Section 10.2. Exclusive Remedy. EXCEPT AS PROVIDED FOR IN THE ENVIRONMENTAL INDEMNITY AGREEMENT AND FOR CLAIMS FOR FRAUD BY A PARTY IN CONNECTION WITH THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, THE EXPRESS REMEDIES SET FORTH IN **Section 3.1**, **Section 4.3**, **Section 4.4**, **Section 4.5**, **Section 4.6**, **Section 7.16**, **Section 10.1** OR **Section 11.1**, SUBJECT TO **Section 11.2**, **Section 11.3**, **Section 11.4** AND **Section 11.5**, AND (FROM AND AFTER THE CLOSING) THE INDEMNITIES SET FORTH IN **ARTICLE 9**, AND ANY CLAIMS COVERED UNDER THE R&W POLICY, ARE THE SOLE AND EXCLUSIVE REMEDIES FOR A PARTY UNDER OR RELATING TO THIS AGREEMENT, WHETHER BASED ON STATUTE, IN TORT, COMMON LAW, STRICT LIABILITY, CONTRACT OR OTHERWISE, AND ALL OTHER REMEDIES OR DAMAGES AT LAW OR IN EQUITY ARE HEREBY WAIVED BY EACH PARTY. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS **ARTICLE 10** SHALL LIMIT ANY PERSON'S RIGHT TO SEEK AND OBTAIN ANY EQUITABLE RELIEF TO WHICH ANY PERSON SHALL BE ENTITLED, OR TO SEEK ANY REMEDY ON ACCOUNT OF ANY PERSON'S FRAUD.

Section 10.3. Limitation on Damages. NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY OR ANY INDEMNIFIED PARTY (AS APPROPRIATE) FOR ANY EXEMPLARY, SPECIAL, INDIRECT, REMOTE, OR SPECULATIVE DAMAGES; *PROVIDED*, *HOWEVER*, THAT SUCH LIMITATION OF LIABILITY SHALL NOT APPLY (A) TO FRAUD OF A PARTY OR (B) WITH RESPECT TO ANY THIRD-PARTY CLAIM THAT INCLUDES SUCH DAMAGES AND WHICH IS SUBJECT TO A PARTY'S INDEMNIFICATION OBLIGATION HEREUNDER.

ARTICLE 11

TERMINATION

Section 11.1. Termination. This Agreement may be terminated, and the transactions contemplated hereby may be abandoned, prior to the Closing:

(a) Mutual Consent. By mutual written consent of the Parties.

(b) Law. By Seller or Purchaser upon written notice to the other Party, in the event that any final and non-appealable Law becomes effective that restrains, enjoins or otherwise prohibits or makes illegal the consummation of the transactions contemplated by this Agreement; *provided*, *however*,

that neither Party may terminate this Agreement pursuant to this **Section 11.1(b)** if such final and non-appealable Law resulted from such Party's failure to fulfill in any material respect any obligation under this Agreement required to be fulfilled by such Party on or prior to the Closing Date.

(c) FERC Approvals.

(i) By either Party, upon written notice to the other Party, if (A) all FERC Approvals have not been received by the Outside Closing Date, or (B) FERC has issued a final Order rejecting any application for such FERC Approvals; *provided*, that a Party shall not have the right to terminate this Agreement pursuant to this **Section 11.1(c)** if such delay in obtaining the FERC Approvals, or rejection of any application for the FERC Approvals, is due to any action or omission of such Party in breach of this Agreement;

(ii) By Seller, upon written notice to Purchaser, if Purchaser (A) without the prior written consent of Seller, elects to withdraw any application for the FERC Approvals for any reason unrelated to a default by Seller, (B) takes any actions to object or oppose any application for the FERC Approvals, or (C) fails to use commercially reasonable efforts to pursue the FERC Approvals; or

(iii) By Purchaser, upon written notice to Seller, if Seller (A) without the prior written consent of Purchaser, elects to withdraw any application for the FERC Approvals for any reason unrelated to a default by Purchaser, (B) takes any actions to object or oppose any application for the FERC Approvals, or (C) fails to use commercially reasonable efforts to pursue the FERC Approvals.

(d) MPSC Approval.

(i) By either Party, upon written notice to the other Party, if (A) the MPSC Approval has not been received by the Outside Closing Date, or (B) the MPSC has issued a final Order rejecting the application for such MPSC Approval; *provided*, that a Party shall not have the right to terminate this Agreement pursuant to this **Section 11.1(d)** if such delay in obtaining the MPSC Approval, or rejection of the application for the MPSC Approval, is due to any action or omission of such Party in breach of this Agreement;

(ii) By Seller, upon written notice to Purchaser, if Purchaser (A) without the prior written consent of Seller, elects to withdraw the application for the MPSC Approval for any reason unrelated to a default by Seller, (B) takes any actions to object or oppose the application for the MPSC Approval, or (C) fails to use commercially reasonable efforts to pursue the MPSC Approval; or

(iii) By Purchaser, upon written notice to Seller, if Seller (A) without the prior written consent of Purchaser, elects to withdraw any application for the MPSC Approval for any reason unrelated to a default by Purchaser, (B) takes any actions to object or oppose the application for the MPSC Approval, or (C) fails to use commercially reasonable efforts to pursue the MPSC Approval.

(e) Seller Material Breach. By Purchaser, upon written notice to Seller, in the event Seller (i) breaches in any material respect any of its representations and warranties under this Agreement on or after the Effective Date or (ii) fails to perform in any material respect any of its obligations under this Agreement after Purchaser has performed or tendered performance in all material respects of its obligations due to be performed up to such date in accordance with this Agreement, in the case of (i) and

(ii) above, and such breach or failure is not cured within the earlier of (A) sixty (60) Days after Seller's receipt of written notice of such breach and (B) the Outside Closing Date.

(f) Purchaser Material Breach. By Seller, upon written notice to Purchaser, in the event Purchaser (i) breaches in any material respects any of its representations and warranties under this Agreement on or after the Effective Date or (ii) fails to perform in any material respect any of its obligations under this Agreement after Seller has performed or tendered performance in all material respects of its obligations due to be performed up to such date in accordance with this Agreement, in the case of (i) and (ii) above, and such breach or failure is not cured within the earlier of (A) sixty (60) Days after Purchaser's receipt of written notice of such breach and (B) the Outside Closing Date.

(g) Closing Date. At any time after the Outside Closing Date, by either Party, upon written notice to the other Party, if the Closing has not occurred by the Outside Closing Date; *provided*, *however*, that neither Party may terminate this Agreement pursuant to this **Section 11.1(g)** if the failure of the applicable conditions precedent to be fulfilled by the Outside Closing Date resulted from such Party's failure to perform in any material respect any obligation under this Agreement required to be performed by such Party on or prior to the Closing Date.

(h) Purchaser Bankruptcy. By Seller, upon written notice to Purchaser, upon the Bankruptcy of Purchaser.

(i) Seller Bankruptcy. By Purchaser, upon written notice to Seller, upon the Bankruptcy of Seller.

Section 11.2. Effect of Termination Prior to Closing. If this Agreement is validly terminated pursuant to **Section 3.1**, **Section 4.3**, **Section 4.4**, **Section 4.5**, **Section 7.5**, **Section 7.16** or **Section 11.1**, then, subject to **Section 11.3**, **Section 11.4** and **Section 11.5**, all further obligations of the Parties under this Agreement (other than the provisions which by their terms are intended to survive the expiration or termination of this Agreement) shall be terminated, and neither Party nor any of its Affiliates shall have any Liability as a result of such termination or any actions or inactions by such Party prior to such termination, including in respect of any breach of this Agreement, other than as provided for in **Section 11.3** or **Section 11.4**, but subject to **Section 11.5**.

Section 11.3. Payment of Purchaser Transaction Expenses. If this Agreement is validly terminated by Purchaser pursuant to **Section 3.1(c)(iii)** (solely in the event such termination is caused by Seller's failure to use commercially reasonable efforts to cure one or more of the Purchaser Title Objections), **Section 11.1(c)(iii)**, **Section 11.1(d)(iii)**, **Section 11.1(e)(ii)** (excluding **Section 11.1(e)(i)**), or **Section 11.1(i),** then Seller shall pay to Purchaser an amount equal to the Purchaser Transaction Expenses promptly, but in no event more than twenty (20) Business Days, after the termination of this Agreement.

Section 11.4. Payment of Seller Transaction Expenses. If this Agreement is validly terminated by Seller pursuant to **Section 11.1(c)(ii)**, **Section 11.1(d)(ii)**, **Section 11.1(f)(ii)** (excluding **Section 11.1(f)(i)**), or **Section 11.1(h)**, then Purchaser shall pay to Seller an amount equal to the Seller Transaction Expenses promptly, but in no event more than twenty (20) Business Days, after the termination of this Agreement.

Section 11.5. Liquidated Damages. The Parties acknowledge that: (a) the agreements contained in **ARTICLE 11** are an integral part of the transactions contemplated hereby; (b) the damages resulting from termination of this Agreement under the circumstances where Purchaser Transaction Expenses or Seller Transaction Expenses are payable pursuant to **Section 11.3** or **Section 11.4** are

uncertain and incapable of accurate calculation and therefore, the amounts payable pursuant to **Section 11.3** and **Section 11.4** is not a penalty but rather constitutes liquidated damages in a reasonable amount that will compensate the respective Party for the efforts and resources expended while negotiating this Agreement and in reliance on this Agreement and on the expectation of the consummation of the transactions contemplated hereby; and (c) without the agreements contained in this **ARTICLE 11**, the Parties would not have entered into this Agreement.

ARTICLE 12

DISPUTE RESOLUTION

Section 12.1. Dispute Resolution. In the event of any dispute, controversy, or claim arising out of or relating to this Agreement (a "Dispute"), the Parties shall first attempt in good faith to resolve the Dispute through informal methods. Each Party shall designate a representative from its management to meet and confer in good faith to seek a mutually agreeable resolution. These discussions shall commence within ten (10) Business Days of a Party providing written notice of the Dispute to the other Party. If the Dispute is not resolved through initial management discussions within thirty (30) Business Days, then the Parties shall escalate the matter to executive management. Each Party shall designate an executive officer to engage in further discussions. These discussions shall commence within ten (10) Business Days following the conclusion of the initial management discussions and shall continue for a period of up to thirty (30) Business Days. If the Dispute remains unresolved after both levels of management discussion, either Party may pursue any remedies available at law or in equity. All discussions and negotiations pursuant to this **Section 12.1** shall be confidential and subject to the terms of **Section 7.9**.

ARTICLE 13

MISCELLANEOUS

Section 13.1. Entire Agreement. This Agreement, together with the Ancillary Agreements, constitutes the entire agreement between the Parties with respect to the transactions contemplated herein, and supersedes all prior discussions, understandings or agreements between the Parties with respect to the transactions contemplated herein. All Exhibits and Schedules attached hereto are a part of this Agreement and are incorporated herein by reference.

Section 13.2. Binding On Successors and Assigns. Subject to **Section 13.3**, this Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assigns.

Section 13.3. Assignment. Prior to the Closing Date, without the prior written consent of the other Party, which consent shall not be unreasonably withheld, delayed or conditioned, neither Party shall, directly or indirectly, assign this Agreement or any of its rights or obligations hereunder. Any attempted assignment in violation hereof shall be null and void and of no force or effect. Notwithstanding any permitted assignment by a Party of this Agreement or any of its rights or obligations hereunder, such assigning Party shall remain liable under this Agreement unless the other Party agrees in writing that such assigning Party shall be relieved of its Liabilities under this Agreement, such agreement not to be unreasonably withheld, conditioned or delayed.

Section 13.4. Waiver. The excuse or waiver of the performance by a Party of any obligation of the other Party under this Agreement shall only be effective if evidenced by a written statement signed by the Party so excusing or waiving. No delay in exercising any right or remedy shall constitute a waiver thereof, and no waiver by Seller or Purchaser of the breach of any obligation in this Agreement shall be

construed as a waiver of any preceding or succeeding breach of the same or any other obligation or condition of this Agreement.

Section 13.5. Governing Law; Jurisdiction.

(a) This Agreement and all documents executed and delivered in connection herewith shall be construed in accordance with the internal Laws of the State of Michigan without regard to the principles of choice of law or conflicts of law.

(b) Seller and Purchaser hereby agree that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by any Party on or with respect to this Agreement or which in any way relates, directly or indirectly, to this Agreement or any event, transaction, or occurrence arising out of or in any way connected with this Agreement or the transactions contemplated hereby, or the dealings of the Parties with respect thereto, shall be tried only by a court and not by a jury. **TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT**. **EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.**

(c) Each of Seller and Purchaser: (i) agree that any Action arising out of or based upon this Agreement or the subject matter hereof or any documents delivered in connection herewith shall be brought only in the courts of the State of Michigan or the United States District Court for the Eastern District of Michigan; (ii) irrevocably submits itself to the exclusive jurisdiction of the such courts for the purpose of any Action arising out of or based upon this Agreement or the subject matter hereof or any documents delivered in connection herewith; (iii) waives, and agrees not to assert, by way of motion, as a defense or otherwise, in any such Action, any claim that it is not subject personally to the jurisdiction of the above named courts, that its property is exempt or immune from attachment or execution, that the action is brought in an inconvenient forum, that the venue of such Action is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court; (iv) consents to the transfer of any Action filed in another court to an applicable court identified in **clause (i)** above; and (v) consents to service of process by registered mail at the address to which notices are to be given if personal service is not, with the exercise of commercially reasonable efforts, possible.

The provisions of this **Section 13.5** shall survive the Closing or earlier termination of this Agreement.

Section 13.6. Counterparts. This Agreement may be executed in any number of counterparts and it shall be sufficient that the signature of each Party appear on one or more such counterparts. All counterparts shall collectively constitute a single agreement.

Section 13.7. Notices. All notices or other communications required or provided to be sent by either Party shall be in writing and shall be sent by: (a) any nationally known overnight delivery service for next Day delivery; (b) delivered in person; or (c) by e-mail. A notice sent by delivery service shall be deemed received on the date noted as delivered on the receipt. A notice delivered in person shall be deemed effective on the date when received. A notice sent by email shall be effective if receipt is acknowledged by the intended recipient. All notices shall be addressed to the Parties at the addresses below:

To Seller:	Consumers Energy Company One Energy Plaza Jackson, MI 49201 Attn: Erin Busby Email: Erin.M.Busby@cmsenergy.com
and a copy to:	Consumers Energy Company One Energy Plaza Jackson, MI 49201 Attn: Robert Beach Email: Robert.Beach@cmsenergy.com
and a copy to:	Troutman Pepper Locke, LLP 401 9th Street, N.W. Suite 1000 Washington, D.C. 20004 Attn: Todd Coles, Esq. Email: Todd.Coles@Troutman.com
To Purchaser:	Confluence Hydro, LLC c/o Hull Street Energy, LLC 4747 Bethesda Avenue, Suite 1220 Bethesda, MD 20814 Attn: Randall Osteen; Charles Arsenault Email: rosteen@hullstreetenergy.com; carsenault@hullstreetenergy.com
and a copy to:	McGuireWoods LLP 500 E. Pratt Street, Suite 1000 Baltimore, MD 21202 Attn: Brian Kelly Email: bkelly@mcguirewoods.com

Any address or name specified above may be changed by notice given to the addressee by the other Party in accordance with this **Section 13.7**. The inability to deliver notice because of a changed address of which no notice was given as provided above, or because of rejection or other refusal to accept any notice, shall be deemed to be the receipt of the notice as of the date of such inability to deliver or rejection or refusal to accept. Any notice to be given by any Party hereto may be given by the counsel for such Party.

Section 13.8. Attorneys' Fees. In the event of a judicial or administrative proceeding or action by one Party against the other Party with respect to the interpretation or enforcement of this Agreement, the prevailing Party shall be entitled to recover reasonable costs and expenses, including reasonable attorneys' fees and expenses, whether at the investigative, pretrial, trial or appellate level. The prevailing Party shall be determined by the court based upon an assessment of which Party's major arguments or position prevailed.

Section 13.9. IRS Real Estate Sales Reporting. Purchaser and Seller hereby agree that the Title Company shall act as "the person responsible for closing" the transaction which is the subject of this Agreement pursuant to Section 6045(e) of the Code and shall prepare and file all informational

returns, including IRS Form 1099 S, and shall otherwise comply with the provisions of Section 6045(e) of the Code.

Section 13.10. **Modification of Agreement**. No modification of this Agreement shall be deemed effective unless in a written amendment signed by Seller and Purchaser that expressly states that it is intended to modify this Agreement.

Section 13.11. **Knowledge**.

(a) Purchaser acknowledges that the Designated Seller Representatives are named solely for the purpose of defining the scope of Seller's Knowledge and not for the purpose of imposing any liability on or creating any duties running from the Designated Seller Representatives to Purchaser and Purchaser agrees that no Designated Seller Representative shall have any liability under this Agreement or in connection with the transactions contemplated hereby.

(b) Seller acknowledges that the Designated Purchaser Representatives are named solely for the purpose of defining the scope of Purchaser's Knowledge and not for the purpose of imposing any liability on or creating any duties running from the Designated Purchaser Representatives to Seller and Seller agrees that no Designated Purchaser Representative shall have any liability under this Agreement or in connection with the transactions contemplated hereby.

Section 13.12. **Descriptive Headings; Word Meaning**. The descriptive headings of the paragraphs of this Agreement are inserted for convenience only and shall not control or affect the meaning or construction of any provisions of this Agreement. Words such as "herein", "hereinafter", "hereof" and "hereunder" when used in reference to this Agreement, refer to this Agreement as a whole and not merely to a subdivision in which such words appear, unless the context otherwise requires. The singular shall include the plural and the masculine gender shall include the feminine and neuter, and vice versa, unless the context otherwise requires. The word "including" shall not be restrictive and shall be interpreted as if followed by the words "without limitation."

Section 13.13. **Time of the Essence**. Time is of the essence of this Agreement and all obligations and deadlines hereunder. Without limiting the foregoing, Purchaser and Seller hereby confirm their intention and agreement that time shall be of the essence of each and every provision of this Agreement, notwithstanding any subsequent modification or extension of any date or time period that is provided for under this Agreement. The agreement of Purchaser and Seller that time is of the essence of each and every provision of this Agreement shall not be waived or modified by any conduct of the Parties, and the agreement of Purchaser and Seller that time is of the essence of each and every provision of this Agreement may only be modified or waived by the express written agreement of Purchaser and Seller that time shall not be of the essence with respect to a particular date or time period, or any modification or extension thereof, which is provided under this Agreement.

Section 13.14. **Construction of Agreement**. This Agreement shall not be construed more strictly against one Party than against the other Party merely by virtue of the fact that it may have been prepared primarily by counsel for one of the Parties, it being recognized that both Purchaser and Seller have contributed substantially and materially to the preparation of this Agreement.

Section 13.15. **Severability**. The Parties intend and believe that each provision in this Agreement comports with all applicable Laws. If, however, any provision in this Agreement is found by a court of law to be in violation of any applicable Law, or public policy, or if in any other respect such a court declares any such provision to be illegal, invalid, unlawful, void or unenforceable as written, then it is the intent of both Parties that, consistent with and with a view towards preserving the economic and

legal arrangements between the Parties as expressed in this Agreement, such provision shall be given force and effect to the fullest possible extent, and that the remainder of this Agreement shall be construed as if such illegal, invalid, unlawful, void, or unenforceable provision were not contained herein, and that the rights, obligations, and interests of the Parties under the remainder of this Agreement shall continue in full force and effect.

Section 13.16. **No Recording**. The provisions hereof shall not constitute a Lien on the Project Assets. Neither Purchaser nor its agents or representatives shall record or file this Agreement or any notice or memorandum hereof in any public records. If Purchaser breaches the foregoing provision, this Agreement shall, at Seller's election, terminate. Purchaser hereby irrevocably appoints Seller as its true and lawful attorney-in-fact, coupled with an interest, for the purpose of executing and recording such documents and performing such other acts as may be necessary to terminate any recording or filing of this Agreement in violation of this provision.

Section 13.17. **No Implied Agreement**. None of Seller or Purchaser shall have any obligations in connection with the transaction contemplated by this Agreement unless both Seller and Purchaser, each acting in its sole discretion, elects to execute and to deliver to the other Party this Agreement. No correspondence, course of dealing or submission of drafts or final versions of this Agreement between Seller and Purchaser shall be deemed to create any binding obligations in connection with the transaction contemplated hereby, and no contract or obligation on the part of Seller or Purchaser shall arise unless and until this Agreement is fully executed by Seller and Purchaser. Once executed and delivered by Seller and Purchaser, this Agreement shall be binding upon them notwithstanding the failure of any broker or other Person to execute this Agreement.

Section 13.18. **Facsimile Signatures**. Seller and Purchaser agree that signatures on this Agreement may be made by electronic means in lieu of an original handwritten signature and said electronic signatures shall be binding. This Agreement may be delivered by a facsimile or an electronic transmission thereof, each of which shall be deemed an original. Any document generated by the Parties with respect to this Agreement, including this Agreement, may be imaged and stored electronically and introduced as evidence in any proceeding as if original business records. Neither Party will object to the admissibility of such images as evidence in any proceeding on account of having been stored electronically.

Section 13.19. **Publicity**. The Parties agree that, except as may be required by applicable Law or stock exchange rule (including the MPSC and/or rules and regulations of the Securities and Exchange Commission and the New York Stock Exchange, if applicable), prior to the Closing, no Party shall contact or conduct negotiations with public officials (except in connection with the Governmental Approvals contemplated by this Agreement and any due diligence activities hereunder), make any public pronouncements, issue press releases or otherwise furnish information regarding this Agreement or the transactions contemplated to any third party without the consent of the other Party, which consent shall not be unreasonably withheld, conditioned or delayed. After the Closing, Purchaser agrees not to disclose specific Purchase Price information in any public pronouncements, press releases or other such disclosures (excluding therefrom any disclosure required by the Securities and Exchange Commission) without Seller's consent, which consent shall not be unreasonably withheld, conditioned or delayed.

Section 13.20. **Further Assurances**. Each Party shall, from time to time, promptly upon the request of the other Party, furnish to the other Party such further information or assurances, execute and deliver such additional documents, instruments and conveyances, and take such other actions and do such other things, in each case, as may be reasonably requested by the other Party consistent with the provisions of this Agreement and necessary to carry out the provisions of this Agreement and each of the other Ancillary Agreements and give effect to the transactions contemplated hereby and thereby.

[The balance of this page has intentionally been left blank. Signature pages follow.]

IN WITNESS WHEREOF, Seller and Purchaser have executed this Agreement as of the Effective Date.

SELLER:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By:_____
Name: Garrick J. Rochow
Title: President & CEO

PURCHASER:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By:_____
Name: Craig Herlihy
Title: Chief Financial Officer

REDACTED

Execution Version

SELLER DISCLOSURE SCHEDULES

in connection with the

PURCHASE AND SALE AGREEMENT

dated as of
September 3, 2025

by and between

CONSUMERS ENERGY COMPANY

and

CONFLUENCE HYDRO, LLC

This Disclosure Schedule is being furnished by Consumers Energy Company, a Michigan corporation (the "Company"), in connection with the execution and delivery of that certain Purchase and Sale Agreement (the "Agreement"), dated as of September 3, 2025, by and between the Company and Confluence Hydro, LLC, a Delaware limited liability company ("Purchaser"). Except as otherwise limited herein or in the Agreement, all disclosures contained in this Disclosure Schedule are made as of Effective Date.

The information set forth in any particular section or subsection of this Disclosure Schedule shall apply only to the corresponding section or subsection of the Agreement and shall not be deemed to apply to any other representation or warranty unless a specific cross-reference is expressly made. Disclosure of a matter in any section of the Disclosure Schedule shall not affect (directly or indirectly) the interpretation of the Agreement or the scope of the disclosure obligation of the Company under the Agreement. This Disclosure Schedule may include items or information which the Company is not required to disclose under the Agreement. The fact that any matter or event is disclosed in a section of the Disclosure Schedule does not necessarily mean that it is material to the Company, whether considered individually or in combination with other matters or events disclosed herein.

In disclosing the information set forth herein, the Company expressly does not waive any attorney-client privilege associated with any such information or any protection afforded by the "work product doctrine" with respect to any of the matters disclosed herein.

The headings and descriptions of the representations and warranties used herein are for convenience of reference only and do not alter the meaning of any provision of the Agreement.

Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the Agreement.

Table of Contents

Schedule 1.1(a)	FERC Licenses
Schedule 1.1(b)	Tangible Personal Property
Schedule 1.1(c)	FCC Licenses
Schedule 1.1(d)	Additional Diligence Materials
Schedule 2.1(b)	Excluded Assets
Schedule 2.1(d)	Excluded Liabilities
Schedule 3.1(e)	Title and Survey (Encumbrances)
Schedule 4.1(j)	Purchaser Regulatory Approvals
Schedule 5.3(a)	No Actions
Schedule 5.5	Seller Third Party Consents
Schedule 5.6(a)	Project Assets (Title)
Schedule 5.6(c)	Project Assets (Condemnation)
Schedule 5.6(d)	Project Assets (Sufficiency)
Schedule 5.6(e)	Project Assets (FERC Licenses)
Schedule 5.7(a)	Real Property Interests
Schedule 5.9(g)	Seller Tax Returns (Proceedings)
Schedule 5.9(l)	Seller Tax Returns (Jurisdictions)
Schedule 5.10(a)	Material Contracts
Schedule 5.10(b)	Material Contracts (Enforceability)
Schedule 5.10(c)	Material Contracts (Breaches or Defaults)
Schedule 5.10(d)	Material Contracts (Payments)
Schedule 5.10(f)	Material Contracts (Third Party Rights)
Schedule 5.11	Broker Fees
Schedule 5.12(a)	Legal Compliance (Applicable Laws)
Schedule 5.12(b)	Legal Compliance (Notices)
Schedule 5.13(a)	Environmental Compliance (Environmental Laws)
Schedule 5.13(b)	Environmental Compliance (Notices)
Schedule 5.13(c)	Environmental Compliance (Material Environmental Permits)
Schedule 5.14(a)	Permits (Material Permits)
Schedule 5.16(a)	Employment Matters (Non-Union Employees)
Schedule 5.16(b)	Employment Matters (Union Employees)
Schedule 5.17(a)	Employee Benefit Matters (Plans)
Schedule 5.17(a)(iv)	Employee Benefit Plans (Title IV)
Schedule 5.17(a)(v)	Employee Benefit Plans (COBRA)
Schedule 5.17(a)(ix)	Employee Benefit Matters (Severance)
Schedule 5.19	Support Obligations
Schedule 6.5	Purchaser Third Party Consents
Schedule 7.6(a)	Excluded Employees
Schedule 7.7(d)	Operation and Maintenance of Project Assets
Schedule 8.4(b)(i)(C)	Property Taxes (Prorations)

Schedule 1.1(a)

FERC Licenses

1. **Alcona Project** (FERC Project No. 2447): Order Issuing New License, 68 FERC ¶ 61,081, dated July 15, 1994, as amended or modified

2. **Calkins Bridge Hydroelectric Project** (FERC Project No. 785): Order Issuing New License, 130 FERC ¶ 62,052, dated January 15, 2010, as amended or modified

3. **Cooke Project** (FERC Project No. 2450): Order Issuing New License, 68 FERC ¶ 61,071, dated July 15, 1994, as amended or modified

4. **Croton Project** (FERC Project No. 2468): Order Issuing New License, 68 FERC ¶ 61,079, dated July 15, 1994, as amended or modified

5. **Five Channels Project** (FERC Project No. 2453): Order Issuing New License, 68 FERC ¶ 61,073, dated July 15, 1994, as amended or modified

6. **Foote Project** (FERC Project No. 2436): Order Issuing New License, 68 FERC ¶ 61,082, dated July 15, 1994, as amended or modified

7. **Hardy Project** (FERC Project No. 2452): Order Issuing New License, 68 FERC ¶ 61,076, dated July 15, 1994, as amended or modified

8. **Hodenpyl Project** (FERC Project No. 2599): Order Issuing New License, 68 FERC ¶ 61,083, dated July 15, 1994, as amended or modified

9. **Loud Project** (FERC Project No. 2449): Order Issuing New License, 68 FERC ¶ 61,075, dated July 15, 1994, as amended or modified

10. **Mio Project** (FERC Project No. 2448): Order Issuing New License, 68 FERC ¶ 61,072, dated July 15, 1994, as amended or modified

11. **Rogers Project** (FERC Project No. 2451): Order Issuing New License, 68 FERC ¶ 61,074, dated July 15, 1994, as amended or modified

12. **Tippy Project** (FERC Project No. 2580): Order Issuing New License, 68 FERC ¶ 61,080, dated July 15, 1994, as amended or modified

13. **Webber Hydroelectric Project** (FERC Project No. 2566): Order Issuing New License, 95 FERC ¶ 62,246, dated June 20, 2001, as amended or modified

Schedule 1.1(b)

Tangible Personal Property

Vehicles and Equipment (over $50,000.00 in value)

5 Channels Project		
26001_TRUCK SUBMETRO 4WD EXT	2021	FORD
26031_TRUCK SUBMETRO 4WD EXT	2021	FORD
28181_PU 3/4T 4WD 8	2011	CHEVROLET
28199_PU 4WD EXT	2019	FORD
28335_PU 3/4T 4WD 6.5 DBL	2015	GMC
28365_PU 3/4T 4WD 6.5 DBL	2015	GMC
28375_PU 3/4T 4WD 6.5 DBL	2015	GMC
28460_PU 3/4T 4WD 8	2010	CHEVROLET
28650_PU 3/4T 4WD 8	2010	CHEVROLET
43006_TRUCK DUMP LT	2016	FORD
54003_TRUCK DUMP MED W/UNDERBODY PLOW	2003	INTERNATIONAL
Outage Trailer Equipped with Tools		
Remote Control Mower		
Boat MC2480PJ		
Boat MC4268LJ		
Tippy Project		
E20031_LOADER BACKHOE MEDIUM	2011	580 SUPER N
28018_PU 3/4T 4WD 8	2008	SILVERADO 2500
28381_PU 4WD 8 EXT	2021	F250
28551_PU 4WD	2021	F250
28980_PU 3/4T 4WD 8	2010	SILVERADO 2500
54052_TRUCK DUMP MED W/UNDERBODY PLOW	2012	7400
Outage Trailer Equipped with Tools		
Hardy Project		
28081_PU 4WD EXT	2021	F250
38622_PU 3/4T 4WD 8	2012	SIERRA 2500
38632_PU 3/4T 4WD 8	2012	SIERRA 2500
27060_SVC 4WD EXT	2020	F350
54012_TRUCK DUMP MED	2002	4800
Remote Control Mower		
Outage Trailer Equipped with Tools		
Boat MC3675TC		
Boat MC4867RK		

Webber Project		
28241_PU 4WD EXT	2021	F250
Calkins Bridge Project		
36083_TRUCK SVC 1T 4WD EXT	2013	SIERRA 3500
Boat MC2299RM		
General Hydro Vehicles		
07-001	2021 Equinox	
07-011	2021 Equinox	
E90096	Bobcat 3400xl ATV	
Boat MC 7206 TY		
28221_PU 4WD EXT	2021 Ford F150	
22131_PU 1/2T 2WD 6.5	2011 Silverado 1500	
22083_PU 1/2T 4WD 6.5 EXT	2013 Sierra 1500	
30379_PU 4WD EXT	2019 Ford F150	

Generating Equipment

Alcona Project Generating Equipment

- Unit 1. 1924 WS Morgan Francis vertical runner with 29’ of head powering a 4.0MW GE generator at 90 RPM, 5000 volts.
- Unit 2. 1924 WS Morgan Francis vertical runner with 29’ of head powering a 4.0MW GE generator at 90 RPM, 5000 volts.

Calkins Bridge Project Generating Equipment

- Unit 1. 1935 Leffell Propeller vertical runner with 16’ of head powering a 0.45MW GE generator at 180 RPM, 4800 volts.
- Unit 2. 1935 Leffell Propeller vertical runner with 16’ of head powering a 0.9 MW GE generator at 120 RPM, 4800 volts.
- Unit 3. 1935 Leffell Propeller vertical runner with 16’ of head powering a 1.2MW GE generator at 112.5 RPM, 4800 volts.

Cooke Project Generating Equipment

- Unit 1. 1911 Allis Chalmers Francis horizontal runner with 39’ of head powering a 1.5MW GE generator at 180 RPM, 2500 volts.
- Unit 2. 1911 Allis Chalmers Francis horizontal runner with 39’ of head powering a 3.0MW GE generator at 180 RPM, 2500 volts.
- Unit 3. 1911 Allis Chalmers Francis horizontal runner with 39’ of head powering a 3.0MW GE generator at 180 RPM, 2500 volts.

Croton Generating Equipment

- Unit 1. 1907 Allis Chalmers Francis horizontal runner with 40’ of head powering a 3.24MW Westinghouse generator at 225 RPM, 7500 volts.
- Unit 2. 1907 Allis Chalmers Francis horizontal runner with 40’ of head powering a 3.24MW Westinghouse generator at 225 RPM, 7500 volts.
- Unit 3. 1915 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.26MW Allis Chalmers generator at 150 RPM, 7500 volts.

- Unit 4. 1915 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.26MW Allis Chalmers generator at 150 RPM, 7500 volts.

Five Channels Generating Equipment
- Unit 1. 1912 Allis Chalmers Francis horizontal runner with 35’ of head powering a 3.0MW GE generator at 150 RPM, 2500 volts.
- Unit 2. 1912 Allis Chalmers Francis horizontal runner with 35’ of head powering a 3.0MW GE generator at 150 RPM, 2500 volts.

Foote Project Generating Equipment
- Unit 1. 1918 Allis Chalmers Francis vertical runner with 39’ of head powering a 3.0MW GE generator at 90 RPM, 5000 volts.
- Unit 2. 1918 Allis Chalmers Francis vertical runner with 39’ of head powering a 3.0MW GE generator at 90 RPM, 5000 volts.
- Unit 3. 1918 Allis Chalmers Francis vertical runner with 39’ of head powering a 3.0MW GE generator at 90 RPM, 5000 volts.

Hardy Project Generating Equipment
- Unit 1. 1931 I. P Morris Francis vertical runner with 99.5’ of head powering a 10.0MW GE generator at 163.5 RPM, 7500 volts.
- Unit 2. 1931 I.P. Morris Francis vertical runner with 99.5’ of head powering a 10.0MW GE generator at 163.5 RPM, 7500 volts.
- Unit 3. 1931 I.P. Morris Francis vertical runner with 99.5’ of head powering a 12.5MW GE generator at 163.5 RPM, 7500 volts.

Hodenpyl Project Generating Equipment
- Unit 1. 1925 Allis Chalmers Francis vertical runner with 67.5’ of head powering a 9.0MW Allis Chalmers generator at 120 RPM, 7500 volts.
- Unit 2. 1925 Allis Chalmers Francis vertical runner with 67.5’ of head powering a 9.0MW Allis Chalmers generator at 120 RPM, 7500 volts.

Loud Project Generating Equipment
- Unit 1. 1913 Allis Chalmers Francis Horizontal runner with 27’ of head powering a 2.0MW GE generator at 120RPM, 2500 volts.
- Unit 2. 1913 Allis Chalmers Francis Horizontal runner with 27’ of head powering a 2.0MW GE generator at 120RPM, 2500 volts.

Mio Project Generating Equipment
- Unit 1. 1916 Allis Chalmers Francis vertical runner with 29’ of head powering a 2.5MW Allis Chalmers generator at 80 RPM, 2500 volts.
- Unit 2. 1916 Allis Chalmers Francis vertical runner with 29’ of head powering a 2.5MW Allis Chalmers generator at 80 RPM, 2500 volts.

Rogers Project Generating Equipment
- Unit 1. 1923 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.68MW Allis Chalmers generator at 150 RPM, 7500 volts.
- Unit 2. 1923 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.68MW Allis Chalmers generator at 150 RPM, 7500 volts.
- Unit 3. 1923 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.68MW Allis Chalmers generator at 150 RPM, 7500 volts.
- Unit 4. 1923 Allis Chalmers Francis vertical runner with 40’ of head powering a 1.68MW Allis Chalmers generator at 150 RPM, 7500 volts.

Tippy Project Generating Equipment

- Unit 1. 1918 WS Morgan Francis vertical runner with 56’ of head powering a 6.67MW Westinghouse generator at 109.1 RPM, 7500 volts.
- Unit 2. 1918 WS Morgan Francis vertical runner with 56’ of head powering a 6.67MW Westinghouse generator at 109.1 RPM, 7500 volts.
- Unit 3. 1918 WS Morgan Francis vertical runner with 56’ of head powering a 6.67MW Westinghouse generator at 109.1 RPM, 7500 volts.

Webber Project Generating Equipment

- Unit 1. 1907 Leffell Francis horizontal runner with 26’ of head powering a 2.3MW GE generator at 164 RPM, 2500 volts.
- Unit 2. 1949 Leffell Propeller vertical runner with 26’ of head powering a 1.0MW EMC generator at 200 RPM, 2500 volts.

Interconnection Equipment

Alcona Project Interconnect Equipment (Not in Substation)

- 112 and 212 Disconnect switches
- 116 and 216 breakers
- Generator # 1
- Generator #2
- Conductors and connections between 4.8kV main bus through to generator 1 and generator 2 including 112, 116, 212, 216

Cooke Project Interconnect Equipment (In Substation)

- Conductors from substation bus to 262B switch
- Conductors from substation bus to 164 switch

Croton Project Interconnect Equipment (In Substation)

- Transformer Bank 1
- 135, 242 and 244 Disconnect switches
- 246 Breaker
- Station power fuses
- 7200 line reactor
- 46kV bus and bus connections from tie to transformer bank 1
- 7200 Bus PTs
- 7200 Bus and bus connections from transformer 1 and station power fusing through to the plant including 135, 244, 242, 246

Croton Project Interconnect Equipment (Not in Substation)

- 7200V conductors to plant

Five Channels Project Interconnect Equipment (In Substation)

- Conductors from substation bus to 166 breaker

Foote Project Interconnect Equipment (In Substation)

- 112, 212, 312 switches
- 116, 216, 316 breakers
- Station power fused switch
- Station power transformer
- 4.8kV conductors, PTs, and connectors in sections containing 116, 216, 316

Foote Project Interconnect Equipment (Not in Substation)

- 4.8kV conductors and connectors from 116, 216, 316 to the plant

Hardy Project Interconnect Equipment (Not in Substation)

- ~1800 feet of 138kV transmission line

Hodenpyl Project Interconnect Equipment (In Substation)

- 299 Disconnect Switch
- Transformer Bank 2
- Conductors from 299 to TB2 and from TB2 to plant
- Conductors from load side of station power disconnect to plant

Hodenpyl Project Interconnect Equipment (Not in Substation)

- Conductors from TB2 to plant
- Conductors from load side of station power disconnect to plant

Loud Project Interconnect Equipment (In Substation)

- 299 Disconnect
- Transformer Bank 2
- From 299 disconnect switch to the TB2 and from TB2 to plant

Loud Project Interconnect Equipment (Not in Substation)

- Transformer Bank #2
- Connections to plant

Mio Project Interconnect Equipment (In Substation)

- 688 Disconnect Switch
- Conductors from the 138kV bus to 688 switch and from 688 to plant

Rogers Project Interconnect Equipment (In Substation)

- From 199 disconnect switch to the plant

Rogers Project Interconnect Equipment (Not in Substation)

- Transformer Bank #1
- Connections from 199 to TB 1 and from TB 1 to plant

Tippy Project Interconnect Equipment (In Substation)

- 2A, 291, and 293 disconnect switch
- 295 grounding switch
- 299 Breaker
- Transformer Bank 2
- 138kV Bus and conductors through TB2, including 295, 291, 293, and 299
- Bus and connectors from TB2 to the plant including the 2A switch

Tippy Project Interconnect Equipment (Not in Substation)

- Conductors from 2A to plant

Webber Project Interconnect Equipment (In Substation)

- 199 and 399 Disconnects and fusing
- Transformer Bank 1
- Transformer Bank 3
- All equipment in the plant
- Connections from substation bus work to the 199 and the 399 disconnects. Also, all connections from the 199 through to the plant and from the 399 through to the plant

Caulkins Bridge Project Interconnect Equipment (Not in Substation)

- Pole and 191 fused switch
- 199 Breaker
- Transformer Bank #1 (TB 1)
- All interconnections between the 191, 199, and TB 1

Warning Siren Equipment

Site Name: Altman Lake	Serial Number
12x16 Concrete Shelter	
ONAN 35KW Generator	H940551324
ONAN Transfer Switch	G940550514
APC SURTD6000 UPS	AS2035172493
APC SURT192 Battery Unit	7S2027L01299
1000 Gallon LP Tank	9SF007282
Guerilla Fly Lamp	200417053
Compac II HVAC	CP-F143282-0-5
Siren System:	
TB9100 Base Station	18293775
Federal Signal Enclosure	
2 Bay Dipole Antenna at 272'	

Site Name: Bear Lake	Serial Number
12x16 Concrete Shelter	
ONAN 35KW Generator	H940551325
ONAN Transfer Switch	A930497918
APC SURTD6000 UPS	AS2132170138
APC SURT192 Battery Unit	7S2110L01700
1000 Gallon LP Tank	9SF007286
Guerilla Fly Lamp	200417036
Compac II HVAC	DC-F132125-0-1
Siren System:	
TB9100 Base Station	18293774
Federal Signal Enclosure	
2 Bay Dipole Antenna at 298'	

Site Name: Norwich	Serial Number
12x16 Concrete Shelter	
ONAN 35KW Generator	J940556705
ONAN Transfer Switch	G940550515
APC SURTD6000 UPS	AS2038273450
APC SURT192 Battery Unit	7S2027L01297
1000 Gallon LP Tank	9SF007285
Guerilla Fly Lamp	200325011
Compac II HVAC	CF-F143282-0-10
Siren System, Blue Enclosure:	
Federal Controller Board	1303
Motorola CDM750 Radio	
Astron Power Supply	2012110008
RACOM 701	01T3B78

Crescend Amplifier	
4 Bay Dipole Antenna at 250'	

Site Name Ensley	Serial Number
12x16 Concrete Shelter	
ONAN 35KW Generator	D950576056
ONAN Transfer Switch	B950569444
APC SURTD6000 UPS	AS2132270325
APC SURT192 Battery Unit	7S2110L01711
1000 Gallon LP Tank	9SF010910
Guerilla Fly Lamp	200417013
Compac II HVAC	CF-F143282-0-4
Siren System, Blue Enclosure:	
Controller Board	
Motorola CDM750 Radio	
Astron Power Supply	2012110009
RACOM 701	
TPL Power Amplifier	42001
4 Bay Dipole Antenna at 370'	

Hardy Project Solar Facility

Fixed tilt solar array facility located adjacent to the headquarters building at the Hardy Project. Such facility is operational and has an electric output of 20 kW at 480 Volts.

Tangible and Intangible Technology

IT OT – Hardware

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
5 Channels	fvchydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
5 Channel (refer to transfer note 1)	5channels1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
5 Channels	otrtrfvcp1	Cisco CGR	Router	Cisco	15.2(8)E3	Presidio	7/31/24
5 Channels	otswtfvcp1	Cisco CGS	Switch	Cisco	15.2(8)E3	Presidio	5/2024
Loud	lodhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Loud (refer to transfer note 1)	Loud1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Loud	otrtrloudp1	Cisco CGR	Switch	Cisco	15.2(8)E3	Presidio	9/3/24
Mio	midhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Mio (refer to transfer note 1)	Mio1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Mio	otrtrmiop1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	1/15/25
Mio	otswtmiohp1	Hirschmann RS20	Switch	Hirschmann	8.7.04	Wesco	8/2023
Alcona	alchydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Alcona (refer to transfer note 1)	Alcona1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Alcona	otrtralconap1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	7/13/23
Alcona	otswtalconahp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	4/2023
Foote	ftdhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Foote (refer to transfer note 1)	Foote1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Foote	otrtrfootep1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	1/15/25
Foote	otswtfootehp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	3/2024
Cooke	ckdhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Cooke (refer to transfer note 1)	Cooke1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Cooke	otrtrcookep1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	10/12/23
Cooke	otswtcookehp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	3/2024
Hardy	hrdhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Hardy (refer to transfer note 1)	Hardy2	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Hardy	otrtrhardyp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	10/17/23
Hardy	otswthardyhp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	5/2024
Croton	crthydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
							added in 2024)
Croton (refer to transfer note 1)	Croton1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Croton	otrtrcrotonp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	10/17/23
Croton	otswtcrotonhp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	5/2024
Rogers	rdghydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Rogers (refer to transfer note 1)	Rogers1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Rogers	otrtrrogersp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	10/12/23
Rogers	otswtrogershp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	6/4/24
Webber	wbdhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Weber (refer to transfer note 1)	Webber1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Webber	otrtrwebberp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	1/2/23
Webber	otswtwebberhp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	2/20/24
Calkins Bridge	aldhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Calkins Bridge (refer to transfer note 1)	Allegan1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Calkins Bridge	otrtralleganp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	10/25/23
Calkins Bridge	otswtalleganhp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	9/2023

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Tippy	tpdhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Tippy (refer to transfer note 1)	Tippy1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Tippy	otrtrtippyp1	Cisco IR1101	Router	Cisco	17.6.1a	Presidio	1/22/24
Tippy	otswttippyhp1	Hirschmann RS20	Switch	Hirschmann	9.1.02	Wesco	5/2024
Hodenpyl	hddhydrohv1	Dell PowerEdge T550	Server	Dell	Windows 2019	Ahead	9/26/2022 (hard drives & memory added in 2024)
Hodenpyl (refer to transfer note 1)	Hodenpyl1	Hyper-V VM	Server	Microsoft	Windows 2019	Microsoft	NA
Hodenpyl	otrtrhodenpylp1	Cisco IR1101	Router	Cisco	17.11.1a	Presidio	1/2/23
Hodenpyl	otswthodenpylhp1	Hirschmann RS20	Switch	Hirschmann	9.0.02	Wesco	1/2024

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Alcona (refer to transfer note 2)	alcbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Calkins Bridge (refer to transfer note 2)	aldbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Cooke (refer to transfer note 2)	cdkbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Foote (refer to transfer note 2)	ftdbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Five Channels (refer to transfer note 2)	fvcbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Hodenpyl (refer to transfer note 2)	hddbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Hardy (refer to transfer note 2)	hrdbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Loud (refer to transfer note 2)	lddbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Mio (refer to transfer note 2)	midbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Rogers (refer to transfer note 2)	rgdbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Tippy (refer to transfer note 2)	tpdbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Webber (refer to transfer note 2)	wbdbku01	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Croton (refer to transfer note 2)	crtbku01a	Virtual Appliance	Virtual Appliance	Rubrik	Linux	Trace3	NA
Alcona (refer to transfer note 3)	OTALCPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Calkins Bridge (refer to transfer note 3)	OTALDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Cooke (refer to transfer note 3)	OTCKDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Croton (refer to transfer note 3)	OTCRTPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Foote (refer to transfer note 3)	OTFTDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Five Channels (refer to transfer note 3)	OTFVCPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Hodenpyl (refer to transfer note 3)	OTHDDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Hardy (refer to transfer note 3)	OTHRDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Loud (refer to transfer note 3)	OTLOUDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Mio (refer to transfer note 3)	OTMIDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Rogers (refer to transfer note 3)	OTRGDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Tippy (refer to transfer note 3)	OTTPDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25
Webber (refer to transfer note 3)	OTWBDPVA1	NSG-L-100A	PVA Site Sensor	Nozomi	N/A	Nozomi	5/14/25

IT OT – Software

Site	Software Name	Software Publisher	Asset Type
Mio	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Calkins Bridge	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Webber	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Rogers	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Foot	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Alcona	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Loud	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Cooke	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Tippy	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Croton	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Hardy	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
5 Channels	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows
Hodenpyl	Mozilla Firefox ESR (x86 en-US)	Mozilla	Windows

Applications

Application	Use
Cadillac K Drive	Files containing generic hydro information

Communications Line

Site	Use
5 Channels and Loud	Fiber communications line connecting 5 Channels to Loud (refer to transfer note 4)

Site PCs & Printers

Site	Asset tag	Configuration Item	Model	Office	Serial number	Date Added/ Upgrade
Alcona	PR10130	PR10130	Hewlett Packard Company Color LaserJet M 479	Main Office	09162022	2022-07-13
Calkins Bridge	PR10237	aldljp01	Zebra Technologies ZT410 Label Printer	N/A	18J182603050	2024-06-10
Calkins Bridge	PR7773	PR7773	Datamax-O'Neil E-4205A	N/A	R22652759	2014-10-10
Calkins Bridge	PC75903	PC75903	Dell Latitude 5420	ALL-100	61C4FN3	2022
Calkins Bridge	PC76566	PC76566	Dell Latitude 5430	GRA-175	9Q5MST3	2023
Tippy	PC75934	PC75934	Dell Latitude 5420	KWP-100	3Z09FN3	2022
Tippy	PC77151	PC77151	Dell Latitude 5430	JHC-100	5VHFWT3	2023
Tippy	PC77577	PC77577	Dell OptiPlex 5000	hodenpyl control room	BJDF1V3	2023
Tippy	PC77609	PC77609	Dell OptiPlex 5000	JHC-100	54FM1V3	2023
Tippy	PC77648	PC77648	Dell OptiPlex 5000	TIP-100	80DL1V3	2023
Tippy	PC79779	PC79779	Dell Latitude 5440	JHC-100	FZCJQ34	2024
Cooke	PR8298	ckdljp01	Zebra Technologies ZT230	Office	18J154201746	2016-03-17
Cooke	PR10127	PR10127	Hewlett Packard Company Color LaserJet M 479	Main Office	CNCRQ557GT	2022-07-13
Croton	PR10108	crtljp05	Hewlett Packard Company Color LaserJet 7740	Control Room	CNCRP4H10D	2021-06-30
Croton	PC68564	PC68564	Dell OptiPlex 5070	CRO-100	7Q1VG13	2021 (being refreshed with PC82025)
Croton	PC69508	PC69508	Dell Latitude 5401	CRO-100	6QDYK13	2021
Croton	PC71720	PC71720	Dell Latitude 5420	JRW-100	33NM9C3	2021 (being refreshed with PC81547)
Croton	PC73380	PC73380	Dell Latitude 5420	WBR-120A	JJHK6G3	2021
Croton	PC75417	PC75417	Dell Latitude 5420	GRE-116	GP5QJQ3	2022
Croton	PC76495	PC76495	Dell Latitude 5430	CRO-100	J7BRST3	2023
Croton	PC79141	PC79141	Dell OptiPlex Tower Plus 7010	CRO-100	3S66X04	2024
Croton	PC79781	PC79781	Dell Latitude 5440	CRO-100	GS5KQ34	2024

Site	Asset tag	Configuration Item	Model	Office	Serial number	Date Added/ Upgrade
Croton	PC79847	PC79847	Dell Latitude 5440	N/A	7QTKQ34	2024
Croton	FW15337	FW15337	Panasonic Corporation CF-33-2	GRA-111	1LTTC24496	2022
Croton	HH01294	HH01294	Panasonic FZ55-1	WBR-120A	1CTTA18976	2021 (PC being refreshed with FW18665)
Five Channels	PR7723	PR7723	ZEBRA GX420T ZM400 DT/TT Label Printer	Five Channels Headquarters/Main Office	08J114400734	2014-10-10
Five Channels	PC41580	fvcnta01	PC41580 - Unknown Unknown	N/A	7WX6QF1	2016-02-29
Five Channels	PR10128	PR10128	Hewlett Packard Company Color LaserJet M 479	Main Office	CNCRQ56061	2022-07-13
Five Channels	HW29210	FVCMTR01	Hewlett-Packard HP Mini	Conferencing PC with Microsoft Teams Rooms	MXL32038RM	2023-10-23
Foote	PR8951	ftdljp01	Zebra Technologies ZT230	Foote Hydro	18J194506393	2020-05-14
Foote	PR10126	PR10126	Hewlett Packard Company Color LaserJet M 479	Main Office	CNCRQ5602H	2022-07-13
Hardy	HW25565	hrdhydrohv1	Dell Poweredge T550	Room 245	1PPY9R3	2022-09-26
Hardy	PR10029	hrdljp02	Zebra Technologies ZT230	Control Room	18J193000451	2019-11-05
Hodenpyl	PR8303	PR8303	Zebra Technologies ZT410 Label Printer	Control room	18J154201745	2016-03-17
Hodenpyl	PR7772	PR7772	Datamax-O'Neil E-4205A	N/A	R23852574	2014-10-10
Loud	PR10129	PR10129	Hewlett Packard Company Color LaserJet M 479	N/A	CNCRQ5607J	2022-07-13
Loud Hydro	PR11016	PR11016	Zebra Technologies ZT411 203dpi Thermal Transfer Label Printer	N/A	99J205303190	2021-04-23
Mio	PR10131	PR10131	Hewlett Packard Company Color LaserJet M 479	Main Office	09162022X	2022-07-13
Mio	PR8636	PR8636	Datamax-O'Neil E-4205A	Hydro Supervisor	R13652443	2016-04-06
Rogers	PR7757	PR7757	Datamax-O'Neil E-4205A	office	R22952006	2014-10-10
Webber	PC76016	PC76016	Dell Latitude 5420	TIP-100	D2P6PQ3	2022
Webber	PC77481	PC77481	Dell Latitude 5430	GRE-103	93N2WT3	2023
Webber	PC77890	PC77890	Dell OptiPlex 5000	LAN-111	BQPDNW3	2023

Site	Asset tag	Configuration Item	Model	Office	Serial number	Vendor Tag	Date Added / Upgraded
Croton (refer to transfer note 5)	PR9283	crtljp04	RICOH IM C2500	Main Office - HQ building	3091R700778	18053044	2022-01-04
Five Channels (refer to transfer note 5)	PR9682	fvcljp05	RICOH AFICIO MP C307SPF	Main Office	C508PB01030	17334550	2019-01-27
Hardy (refer to transfer note 5)	PR10966	hrdljp06	RICOH IM C6010	Admin bldg	9193R310146	18006164	2024-01-17
Hardy (refer to transfer note 5)	PR9395	hrdljp01	RICOH IM C300	Control Room	3922P650959	18052967	2022-12-28
Hardy (refer to transfer note 5)	PR9430	PR9430	RICOH IM C6000	Hardy main office	3141RC90587	18006085	2022-04-20
Hardy (refer to transfer note 5)	PR9661	hrdljp05	RICOH AFICIO MP C307SPF	Hardy main office	C508P200898	17334482	2018-12-21
Hodenpyl (refer to transfer note 5)	PR9424	hddljp03	RICOH IM C300	Plant Control Room	3922P850913	18052944	2023-01-24
Rogers (refer to transfer note 5)	PR8839	rgdljp02	RICOH AFICIO MP C307SPF	Control Room	C508P704165	14157028	2018-10-25
Tippy (refer to transfer note 5)	PR8829	tpdljp05	RICOH AFICIO MP C3004	Main Office	C718M510759	14132807	2018-11-09
Tippy (refer to transfer note 5)	PR9327	tpdljp06	RICOH IM C300	Control Room	3923P350236	18006125	2023-01-27

Security Equipment

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Alcona	ALCDVE18	ALCDVE18	ALCDVE18	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Alcona	ALCDVE19	ALCDVE19	ALCDVE19	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Alcona	ALDDVE16	ALDDVE16	ALDDVE16	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Alcona	C9GJK93	C9GJK93	C9GJK93	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Alcona	HW23105	HW23105	HW23105	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Alcona	HW23106	HW23106	HW23106	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Alcona	HW23107	HW23107	HW23107	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Alcona	HW23108	HW23108	HW23108	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Alcona	HW23109	HW23109	HW23109	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Alcona	HW23110	HW23110	HW23110	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Calkins Bridge	HW23333	HW23333	HW23333	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Calkins Bridge	HW23337	HW23337	HW23337	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Calkins Bridge	HW23419	HW23419	HW23419	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Calkins Bridge	HW23421	HW23421	HW23421	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Calkins Bridge	HW23423	HW23423	HW23423	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Calkins Bridge	HW23425	HW23425	HW23425	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Cooke	CKDDVE11	CKDDVE11	CKDDVE11	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Cooke	CKDDVE12	CKDDVE12	CKDDVE12	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Cooke	Ckdnvr01	Ckdnvr01	Ckdnvr01	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Cooke	HW23218	HW23218	HW23218	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Cooke	HW23219	HW23219	HW23219	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Cooke	HW23334	HW23334	HW23334	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Cooke	HW23335	HW23335	HW23335	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Cooke	HW23336	HW23336	HW23336	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Cooke	HW23339	HW23339	HW23339	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Cooke	HW23340	HW23340	HW23340	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Croton	CRTDVE47	CRTDVE47	CRTDVE47	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Croton	CRTDVE54	CRTDVE54	CRTDVE54	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Croton	HW23141	HW23141	HW23141	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Croton	HW23142	HW23142	HW23142	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Croton	HW23144	HW23144	HW23144	Avigilon Corporation 8MP Bullet Camera 4.9-8mm	Avigilon	2021
Croton	HW23145	HW23145	HW23145	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Croton	HW23146	HW23146	HW23146	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Croton	HW23147	HW23147	HW23147	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Croton	HW23148	HW23148	HW23148	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Croton	HW23149	HW23149	HW23149	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Croton	HW23150	HW23150	HW23150	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Croton	HW23152	HW23152	HW23152	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Croton	HW23153	HW23153	HW23153	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Croton	HW23154	HW23154	HW23154	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Croton	HW23155	HW23155	HW23155	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Croton	HW23158	HW23158	HW23158	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Croton	HW23159	HW23159	HW23159	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Croton	HW23405	HW23405	HW23405	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Croton	HW23406	HW23406	HW23406	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Five Channels	HW22459	HW22459	HW22459	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Five Channels Hydro	HW22461	HW22461	HW22461	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Five Channels	HW22467	HW22467	HW22467	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Five Channels	HW23250	HW23250	HW23250	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Five Channels	HW23251	HW23251	HW23251	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Five Channels	HW23252	HW23252	HW23252	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Five Channels	HW23253	HW23253	HW23253	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Five Channels	HW23254	HW23254	HW23254	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Five Channels	HW23257	HW23257	HW23257	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Five Channels	HW23258	HW23258	HW23258	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Five Channels	HW23259	HW23259	HW23259	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Five Channels	HW23261	HW23261	HW23261	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Five Channels	HW23264	HW23264	HW23264	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Foote	C02F8B3	C02F8B3	C02F8B3	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Foote	FTDDVE11	FTDDVE11	FTDDVE11	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Foote	FTDDVE12	FTDDVE12	FTDDVE12	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Foote	HW23325	HW23325	HW23325	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Foote	HW23326	HW23326	HW23326	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Foote	HW23328	HW23328	HW23328	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Foote	HW23329	HW23329	HW23329	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Foote	HW23330	HW23330	HW23330	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Foote	HW23331	HW23331	HW23331	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Foote	HW23332	HW23332	HW23332	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Hardy	HRDDVE22	HRDDVE22	HRDDVE22	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Hardy	HW23088	HW23088	HW23088	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Hardy	HW23093	HW23093	HW23093	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Hardy	HW23213	HW23213	HW23213	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Hardy	HW23214	HW23214	HW23214	Avigilon 4X5MP, WDR, 360-degree max field of view	Avigilon	2021
Hardy	HW23215	HW23215	HW23215	Avigilon 4X5MP, WDR, 360-degree max field of view	Avigilon	2021
Hardy	HW23216	HW23216	HW23216	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Hardy	HW23217	HW23217	HW23217	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hardy	HW23220	HW23220	HW23220	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Hardy	HW23221	HW23221	HW23221	Avigilon Corporation 8MP Bullet Camera 4.9-8mm	Avigilon	2021
Hardy	HW23222	HW23222	HW23222	Avigilon Corporation 8MP Bullet Camera 4.9-8mm	Avigilon	2021
Hardy	HW23223	HW23223	HW23223	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hardy	HW29140	HW29140	HW29140	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hardy	HW29143	HW29143	HW29143	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25873	HW25873	HW25873	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25874	HW25874	HW25874	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25875	HW25875	HW25875	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Hodenpyl	HW25876	HW25876	HW25876	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Hodenpyl	HW25877	HW25877	HW25877	Avigilon Corporation 4.0C-H5A-D1-IR Indoor Dome	Avigilon	2021
Hodenpyl	HW25878	HW25878	HW25878	Avigilon Corporation 4.0C-H5A-D1-IR Indoor Dome	Avigilon	2021
Hodenpyl	HW25879	HW25879	HW25879	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25880	HW25880	HW25880	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25881	HW25881	HW25881	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Hodenpyl	HW25882	HW25882	HW25882	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Hodenpyl	HW25883	HW25883	HW25883	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Hodenpyl	HW25885	HW25885	HW25885	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Hodenpyl	HW25886	HW25886	HW25886	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Hodenpyl	HW25887	HW25887	HW25887	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Loud	HW23143	HW23143	HW23143	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Loud	HW23151	HW23151	HW23151	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Loud	HW23288	HW23288	HW23288	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Loud	HW23289	HW23289	HW23289	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Loud	HW23295	HW23295	HW23295	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Loud	HW23297	HW23297	HW23297	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Loud	HW23298	HW23298	HW23298	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Loud	HW23301	HW23301	HW23301	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Loud	LDDDVE00	LDDDVE00	LDDDVE00	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Loud	LDDDVE01	LDDDVE01	LDDDVE01	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Mio	HW23365	HW23365	HW23365	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Mio	HW23403	HW23403	HW23403	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Mio	HW23404	HW23404	HW23404	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Mio	HW23407	HW23407	HW23407	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Mio	HW23420	HW23420	HW23420	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Mio	HW23422	HW23422	HW23422	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Mio	HW29194	HW29194	HW29194	COMNET INC Ethernet Switch CNGE4+2SMSPOEHO/M	COMNET INC	2021
Mio	MIDDVE47	MIDDVE47	MIDDVE47	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021
Mio	MIDDVE50	MIDDVE50	MIDDVE50	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Rogers	HW23408	HW23408	HW23408	Avigilon Corporation Thermal Bullet 18.0mm	Avigilon	2021
Rogers	HW23409	HW23409	HW23409	Avigilon Corporation Thermal Bullet 18.0mm	Avigilon	2021
Rogers	HW23410	HW23410	HW23410	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Rogers	HW23411	HW23411	HW23411	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Rogers	HW23412	HW23412	HW23412	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Rogers	HW23413	HW23413	HW23413	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Rogers	HW23414	HW23414	HW23414	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Rogers	HW23416	HW23416	HW23416	COMNET INC Ethernet Switch CNGE2FE8MSPOE+	COMNET INC	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Rogers	HW23418	HW23418	HW23418	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Rogers	RGDDVE35	RGDDVE35	RGDDVE35	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Tippy	102201129412	HW23373	HW23373	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Tippy	102201129619	HW23372	HW23372	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Tippy	112110013705	HW23371	HW23371	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Tippy	112111021938	HW23370	HW23370	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Tippy	112111021944	HW23369	HW23369	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Tippy	112111032226	HW23367	HW23367	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Tippy	112111032282	HW23368	HW23368	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Tippy	C9GQK93	C9GQK93	C9GQK93	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Tippy	HW23199	HW23199	HW23199	Avigilon Corporation 12MP Fisheye IR Dome Camera	Avigilon	2021
Tippy	HW23201	HW23201	HW23201	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021
Tippy	NFV10870	NFV10870	NFV10870	Panasonic Corporation WV-SW115 Vandal Resistant Network Dome Camera	Panasonic	2021
Tippy	NFV10909	NFV10909	NFV10909	Panasonic Corporation WV-SW115 Vandal Resistant Network Dome Camera	Panasonic	2021
Tippy	QDV24753	QDV24753	QDV24753	Panasonic Corporation i-Pro Smart HD WV-SW458	Panasonic	2021
Tippy	TPDDVE21	TPDDVE21	TPDDVE21	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Tippy	TPDDVE31	TPDDVE31	TPDDVE31	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Webber	HW23193	HW23193	HW23193	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23194	HW23194	HW23194	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23195	HW23195	HW23195	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23196	HW23196	HW23196	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23197	HW23197	HW23197	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23198	HW23198	HW23198	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23200	HW23200	HW23200	Avigilon Corporation 32MP 360 Multisensor	Avigilon	2021
Webber	HW23202	HW23202	HW23202	Avigilon Corporation 2.0MP Outdoor Dome	Avigilon	2021

Location	Name	Asset	Asset tag	Model ID	Manufacturer	Date Added / Upgraded
Webber	HW23203	HW23203	HW23203	COMNET INC Ethernet Switch CNGE11FX3TX8MSPOEHO	COMNET INC	2021
Webber	HW23204	HW23204	HW23204	COMNET INC Ethernet Switch CNGE26FX2TX24MSPOE1	COMNET INC	2021
Webber	HW23205	HW23205	HW23205	Avigilon AINVR-VAL-12TB-EU AI NVR Value 12 TB	Avigilon	2021
Hardy	HW23342	HW23342	HW23342	Panasonic Corporation i-Pro WV-S4151L 5MP Outdoor 360 Fisheye Network Dome Camera WV-S4551L	Panasonic	2020
Hardy	HW23349	HW23349	HW23349	Panasonic Corporation WV-SW115 Vandal Resistant Network Dome Camera	Panasonic	2020
Hardy	HW23347	HW23347	HW23347	Panasonic Corporation i-Pro WV-X4573L 12MP Outdoor Network 360° Panoramic Fisheye Dome Camera	Panasonic	2020
Hardy	HW23350	HW23350	HW23350	Panasonic Corporation WV-SW115 Vandal Resistant Network Dome Camera	Panasonic	2020
Hardy	HW23344	HW23344	HW23344	Panasonic Corporation i-Pro WV-X4573L 12MP Outdoor Network 360° Panoramic Fisheye Dome Camera	Panasonic	2020
Hardy	HW23343	HW23343	HW23343	Panasonic Corporation i-Pro WV-S4151L 5MP Outdoor 360 Fisheye Network Dome Camera WV-S4551L	Panasonic	2020
Hardy	HW23346	HW23346	HW23346	Panasonic Corporation i-Pro WV-X4573L 12MP Outdoor Network 360° Panoramic Fisheye Dome Camera	Panasonic	2020
Hardy	HW23348	HW23348	HW23348	Panasonic Corporation i-Pro WV-X4573L 12MP Outdoor Network 360° Panoramic Fisheye Dome Camera	Panasonic	2020
Hardy	HW23351	HW23351	HW23351	Panasonic Corporation i-Pro Extreme WJ-NX300	Panasonic	2020
Hardy	HW23345	HW23345	HW23345	Panasonic Corporation i-Pro WV-X4573L 12MP Outdoor Network 360° Panoramic Fisheye Dome Camera	Panasonic	2020

Security – Other Equipment

Site	Asset_ID	Serial Number	Description	Dated Added / Upgraded
Alcona	1259995320	Access Control & Security	Access Control & Security: Includes - proximity card reader (east entry) power supply, etc.	2015
Alcona	1862330603	INTAKE DECK ENTRY DOOR	(1) RS2 MR-DT Keypad Intake Deck Entry Door	2015
Alcona	1867877499	POWER HOUSE ACS CNTL	Access Control Additions on Power House (2) AWID SP6820 Proximity Card Reader	2015
Calkins Bridge	1421492546	Hydro Plant Sec	HYDRO PLANT SECURITY SYSTEM (1) Card Reader W/3 Door Sencors	2016
Cooke	1867487072	POWER HOUSE ACS CNTL	Access Control Additions on Power House (2) AWID SP6820 Proximity Card Reader	2015
Croton	1261025160	Hydro Plant Security	Hydro Plant Security Includes: (1) Card Readers (N Intake Entry &East Door) Transformer, Power Supply, Etc.	2014
Croton	1861220049	(2) AWID CARD READERS	(2) AID SP6820 Proximity Card Readers - 1 at North Intake Door and 1 at East Embankment Door	2014
Five Channels	1862138930	(2) AWID CARD READERS	(2) AWID SP6820 Proximity Card Reader Located in Power House	2015
Five Channels	1827020436	ADMIN BLD	Admin Building: (2) For Building Access Front and Back, (1) Man Gate, (1) Document Control And (1) LAN Room	2015
Five Channels	1866750786	ACCESS CONT/GATE SYSTEM	(1) transformers, power supply, distribution board, battery (2) AWID MR1824 Proximity Card Readers (3) Viking E30EWP Hands Free Entry Phones (3) Viking VE5X5 Surface Box (2) Viking RCA2 DTMF Remote Control Intercom, Power Supply, Intercom Substations, Gate Operator Interface, Card Reader Arms	2015
Five Channels	977674621		Office Building, Plant and Gate Security- Monitors, Card Readers, Cameras	2013
Foote	1862138953	(2) AWID CARD READERS	Located on Power House AWID SP6820 Proximity Card Readers	2015
Foote	1259995399		Hydro Plant Security System: Proximity Card Reader, Transformer, Power Supply	2015
Hardy	1861366514	(2) AWID CARD READERS	West Powerhouse Entry Door - (1) AWID SP6820 Proximity Card Reader AWID SP6820 Proximity Card Reader	2014
Hardy	1845086324	Vehicle Gate Card Readers	Vehicle Gate Card Readers Intrusion System	2014

Site	Asset_ID	Serial Number	Description	Dated Added / Upgraded
Hodenpyl	1259917675	Hodenpyl Power Plant	Hodenpyl Power Plant Security System Includes (2) card readers)	2016
Loud	1259917829	Access Control & Security	AIPHONE LE-D Intercom, Power Supply, Etc.	2015
Mio	1866934669	POWER HOUSE ACCESS CNTRL	AWID SP6820 Proximity Card Readers Installed by GSI	2015
Rogers	1858813355	(2) CARD READERS	AWID SP2680 Proximity Card Readers for East and West Entry	2014
Webber	1259920224	Vehicle Gate Security Sys	readers, intercom, other gate security equipment	2016

Corporate Network Equipment

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Alcona (refer to transfer note 6)	ALCFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	5/27/25
Alcona (refer to transfer note 6)	ALCSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	7/25/2023
Alcona (refer to transfer note 6)	ALCWAP12	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	11/16/2023
Calkins Bridge (refer to transfer note 6)	ALDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	4/28/25
Calkins Bridge (refer to transfer note 6)	ALDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	2024
Cooke (refer to transfer note 6)	CKDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	5/22/25
Cooke (refer to transfer note 6)	CKDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	5/22/25
Cooke (refer to transfer note 6)	CKDWAP11	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Cooke (refer to transfer note 6)	CKDWAP12	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Croton (refer to transfer note 6)	CRTFRW01	PA-820	Firewall	Palo Alto	10.2.9-h1	CDW	2024
Croton (refer to transfer note 6)	CRTSWT11	EX4100-24MP	Switch	Juniper	22.4R3-S2.12	CDW	9/20/2023
Croton (refer to transfer note 6)	CRTSWT12	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	9/20/2023
Croton (refer to transfer note 6)	CRTWAP11	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Five Channels (refer to transfer note 6)	FVCFRW01	PA-820	Firewall	Palo Alto	10.2.9-h1	CDW	8/7/25
Five Channels (refer to transfer note 6)	FVCSWT11 member 0	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	9/19/2024

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Five Channels (refer to transfer note 6)	FVCSWT11 member 1	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	9/19/2024
Five Channels (refer to transfer note 6)	FVCSWT12	EX4100-24MP	Switch	Juniper	22.4R3-S2.12	CDW	9/19/2024
Five Channels (refer to transfer note 6)	FVCWAP12	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Five Channels (refer to transfer note 6)	FVCWAP13	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Five Channels (refer to transfer note 6)	FVCWAP14	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Five Channels (refer to transfer note 6)	FVCWAP21	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Five Channels (refer to transfer note 6)	FVCWAP22	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Foote (refer to transfer note 6)	FTDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	4/2025
Foote (refer to transfer note 6)	FTDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	8/16/2023
Foote (refer to transfer note 6)	FTDWAP11	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	8/16/2023
Foote (refer to transfer note 6)	FTDWAP12	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Hodenpyl (refer to transfer note 6)	HDDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	4/2025
Hodenpyl (refer to transfer note 6)	HDDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	8/28/2023
Hodenpyl (refer to transfer note 6)	HDDWAP11	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	8/28/2023
Hardy (refer to transfer note 6)	HRDFRW01	PA-820	Firewall	Palo Alto	10.2.9-h1	CDW	2024

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Hardy (refer to transfer note 6)	HRDSWT11 member 0	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	10/3/2024
Hardy (refer to transfer note 6)	HRDSWT11 member 1	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	10/3/2024
Hardy (refer to transfer note 6)	HRDSWT12	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	10/3/2024
Hardy (refer to transfer note 6)	HRDWAP11	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Hardy (refer to transfer note 6)	HRDWAP12	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Hardy (refer to transfer note 6)	HRDWAP13	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Hardy (refer to transfer note 6)	HRDWAP14	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Loud (refer to transfer note 6)	LDDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	9/19/2024
Loud (refer to transfer note 6)	LDDWAP11	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Loud (refer to transfer note 6)	LDDWAP12	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Mio (refer to transfer note 6)	MIDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	5/8/25
Mio (refer to transfer note 6)	MIDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	10/26/2023
Mio (refer to transfer note 6)	MIDWAP11	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Rogers (refer to transfer note 6)	RGDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	4/15/25
Rogers (refer to transfer note 6)	RGDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	9/13/2023
Rogers (refer to transfer note 6)	RGDWAP11	C9120AXI-B	Wireless Access Point	Cisco	8.10.181.3	CDW	2023
Tippy (refer to transfer note 6)	TPDFRW01	PA-820	Firewall	Palo Alto	10.2.9-h1	CDW	2024
Tippy (refer to transfer note 6)	TPDSWT11	EX4100-48MP	Switch	Juniper	22.4R3-S2.12	CDW	11/8/2024

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller	Date Added / Upgraded
Tippy (refer to transfer note 6)	TPDSWT12	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	11/8/2024
Tippy (refer to transfer note 6)	TPDWAP11	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Tippy (refer to transfer note 6)	TPDWAP12	AIR-AP2802I-B-K9	Wireless Access Point	Cisco	8.10.181.3	CDW	2024
Webber (refer to transfer note 6)	WBDFRW01	PA-220	Firewall	Palo Alto	10.2.9-h1	CDW	4/17/25
Webber (refer to transfer note 6)	WBDSWT11	EX4100-F-12P	Switch	Juniper	22.4R3-S2.12	CDW	2/28/2024

UPS & Enclosures

Site	Asset tag	Model	Manufacturer	Model category	Configuration Item	Manufacturer	Display name	Date Added / Upgraded
Five Channels	HW08489	APC Symmetra-UPS 16kVA	APC	UPS	Fvcups11	APC	HW08489 - APC Symmetra-UPS 16kVA	4/2025
Tippy	HW23472	APC SMART-UPS 1500	APC	UPS	tpdups11 was replaced with HW23472	APC	HW23472 - APC SMART-UPS 1500	7/2024
Five Channels	HW25363	APC SMART-UPS 1500	APC	UPS	Fvcups12	APC	HW25363 - APC SMART-UPS 1500	08/2022

Business Equipment

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Webber	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	Modbus/IP Card	ProSoft/InRax	N/A
Webber	PLC_Processor	PLC Processor	PLC	Allen Bradley	L33ER
Webber	U1_Power_Monitor	U1 Power Monitor	Monitor	Electro Industries Gauge Tech/Shark	Shark 100-60-10-V3- D2-INP10-X
Webber	U2_Power_Monitor	U2 Power Monitor	Monitor	Electro Industries Gauge Tech/Shark	Shark 100-60-10-V3- D2-INP10-X
Webber	Bus_Power_Monitor	Bus Power Monitor	Monitor	N/A	N/A
Webber	Breaker_166_PM	166 Power Monitor	Monitor	N/A	N/A
Webber	Shark Meter	HOG Spill Hoist Power Monitor (West)	Monitor	Electro Industries Gauge Tech	Shark 100 ENC4XSHK100-60-10-V1-D2-INP10-X
Webber	Shark Meter	HOG Spill Hoist Power Monitor (East)	Monitor	Electro Industries Gauge Tech	Shark 100 ENC4XSHK100-120-60-10-V1-D2-INP
-Webber	Flex I/O Adapter	Flex I/O Adapter Module	RTU - Analog Input Module	Allen Bradley	N/A
Webber	U1_Exciter	U1 Exciter Controller (Basler DECS-250)	Domain Controller	Basler Electric	DECS-250
Webber	U2_Exciter	U2 Exciter Controller (Basler DECS250)	Domain Controller	Basler Electric	DECS-250
Webber	U1_Governor	U1 Governor Control PLC	PLC - Ethernet Module	Allen Bradley	N/A
Webber	U1_Governor	U1 Governor Control HMI #1	HMI	Maple Systems	N/A
Webber	U1_Governor	U1 Governor Control PLC Ethernet I/O	PLC - Ethernet Module	Phoenix Contact	N/A
Webber	U1_Governor	U1 Governor Control HMI #2	HMI	Maple Systems	HMI5070NLv2
Webber	U2_Governor	U2 Governor Control PLC	PLC - Controller Module	Allen Bradley	L33ER
Webber	U2_Governor	U2 Governor Control HMI	HMI	Maple Systems	HMI5070NLv2

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Webber	U1_Exciter	U1 Exciter Controller HMI (Basler DECS-250)	HMI	Basler Electric	PFXGP4401TAD
Webber	U2_Exciter	U2 Exciter Controller HMI (Basler DECS-250)	HMI	Basler Electric	DECS-250
Webber	USGS_Portland	Portland USGS Gauge	N/A	N/A	N/A
Webber	Webber SCADA Modem	Webber SCADA Modem	Modem Hardware	Sixnet	SN 6000
Webber	Remote Alarm Dialer	Security	Security Device	Verbatim	Series VSS
5 Channels	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	Modbus/IP Card	inRAx	MVI69E-MBTCP
5 Channels	PLC_Processor	PLC Processor	PLC	Allen Bradley/CompactLogix	N/A
5 Channels	U1_Power_Monitor	U1 Power Monitor	Monitor	SATEC	PM135EH
5 Channels	U2_Power_Monitor	U2 Power Monitor	Monitor	SATEC	PM135EH
5 Channels	Breaker_166_PM	166 Power Monitor	Monitor	SATEC	PM135EH
5 Channels	U1 Governor	U1 Governor PLC	PLC - Controller Module	Allen Bradley/CompactLogix	L33ER
5 Channels	U1 Governor	U1 Governor HMI	HMI	Maple Systems	HMI5070NLv2
5 Channels	U2 Governor	U2 Governor PLC	PLC - Controller Module	Allen Bradley/CompactLogix	L33ER
5 Channels	U2 Governor	U2 Governor HMI	HMI	Basler Electric/Proface Digital Electronics Corporation	HMI5070NLv2
5 Channels	U1_Exciter	U1 Exciter Controller (Basler DECS-400)	Domain Controller	Basler Electric	DECS-400-SSE
5 Channels	U1_Exciter_HMI	U1 Exciter Controller Local HMI	HMI	Basler Electric/Proface Digital Electronics Corporation	PFXGP4401TAD
5 Channels	U2_Exciter	U2 Exciter Controller (Basler DECS-400)	Domain Controller	Basler Electric	DECS-400-SSE
5 Channels	U2_Exciter_HMI	U2 Exciter Controller Local HMI	HMI	Basler Electric/Proface Digital Electronics Corporation	PFXGP4401TAD
5 Channels	Battery Monitor	Battery Monitor	Monitor	Hindle Power	EN5060-00
5 Channels	USGS_Glennie	Au Sable Gauge - Glennie	N/A	N/A	N/A
5 Channels	5Channels SCADA Modem	5Channels SCADA Modem	N/A	N/A	N/A

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Loud	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	Modbus/IP Card	ProSoft/inRax	
Loud	PLC_Processor	PLC Processor	PLC - Ethernet Module	Allen Bradley/CompactLogix	L33ER
Loud	U1_Power_Monitor	U1 Power Monitor	Monitor	Allen Bradley/CompactLogix	Powermonitor 1000
Loud	U2_Power_Monitor	U2 Power Monitor	Monitor	Allen Bradley/CompactLogix	Powermonitor 1000
Loud	Bus_Power_Monitor	Bus Power Monitor	Monitor	Allen Bradley/CompactLogix	Powermonitor 1000
Loud	Breaker_166_PM	166 Power Monitor	Monitor	Allen Bradley/CompactLogix	Powermonitor 1000
Loud	Battery Monitor	Equalink Battery Monitor	Monitor	Equalink	N/A
Loud	Battery Monitor	Epic Battery Monitor	Monitor	Hindle Health Systems	Epic
Loud	Loud SCADA Modem	Loud SCADA Modem	N/A	N/A	N/A
Loud	U1 Governor	U1 Governor PLC	PLC - Controller Module	Allen Bradley/CompactLogix	L33ER
Loud	U1 Governor	U1 Governor HMI	HMI	WEINTEK	MT8071iE
Loud	U2 Governor	U2 Governor PLC	PLC - Controller Module	Allen Bradley/CompactLogix	L33ER
Loud	U2 Governor	U2 Governor HMI	HMI	WEINTEK	MT8071iE
Foote	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	Modbus/IP Card	ProSoft/inRAx	MVI69-MNET
Foote	PLC_Processor	PLC Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Foote	U1_Power_Monitor	U1 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Foote	U2_Power_Monitor	U2 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Foote	U3_Power_Monitor	U3 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Foote	Bus_Power_Monitor	Bus Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Foote	Breaker_166_PM	166 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Foote	USGS_Curtisville	Au Sable Gauge - Curtisville	N/A	N/A	N/A
Foote	USGS_Au_Sable	Au Sable Gauge - Au Sable	N/A	N/A	N/A
Foote	Foote SCADA Modem	Foote SCADA Modem	Modem Hardware	Sixnet	SN 6000
Mio	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	Modbus/IP Card	ProSoft/inRAx	MVI69-MNET

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Mio	PLC_Processor	PLC Processor	Monitor	Allen Bradley/Compact Logix	L33ER
Mio	U1_Power_Monitor	U1 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Mio	U2_Power_Monitor	U2 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Mio	Bus_Power_Monitor	Bus Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Mio	Breaker_166_PM	166 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Mio	U1 Governor	U1 Governor PLC	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Mio	U1 Governor HMI	U1 Governor PLC HMI	HMI	Maple Systems	HMI5070NLv2
Mio	U2 Governor	U2 Governor PLC	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Mio	U2 Governor HMI	U2 Governor PLC HMI	HMI	Maple Systems	HMI5070NLv2
Mio	USGS_Red_Oak	Au Sable Gauge - Red Oak	N/A	N/A	N/A
Mio	USGS_Mio	Au Sable Gauge - Mio	N/A	N/A	N/A
Mio	Mio SCADA Modem	Mio SCADA Modem	Modem Hardware	Sixnet	SN 6701
Alcona	USGS Curtisville Modem	USGS Modem	Modem Hardware	N/A	N/A
Alcona	MNET_Modbus	MNET Modbus Module connects to USGS Gauge	PLC - Controller Module	Allen Bradley/Compact Logix	N/A
Alcona	PLC_Processor	PLC Processor	Monitor	Allen Bradley	L33ER
Alcona	U1_Power_Monitor	U1 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Alcona	U2_Power_Monitor	U2 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Alcona	Bus_Power_Monitor	Bus Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Alcona	Breaker_166_PM	166 Power Monitor	Monitor	Allen Bradley	Powermonitor 1000
Alcona	USGS_Mckinley	Au Sable Gauge - McKinley	N/A	N/A	N/A
Alcona	USGS_Curtisville	Au Sable Gauge - Curtisville	N/A	N/A	N/A
Alcona	Alcona SCADA Modem	Alcona SCADA Modem	Modem Hardware	Sixnet	SN 6000
Hardy	MNET Modbus Module connects to USGS Gauge	MNET_Modbus	Modbus/IP card	ProSoft/inRax	N/A
Hardy	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Hardy	U1 Power Monitor	U1_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hardy	U2 Power Monitor	U2_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hardy	U3 Power Monitor	U3_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hardy	Bus Power Monitor	Bus_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hardy	166 Power Monitor	Breaker_166_PM	Breaker	Allen Bradley	Powermonitor 1000
Hardy	Equalink Battery Monitor	Battery Monitor	Monitor	Equalink	N/A
Hardy	Hardy SCADA Modem	Hardy SCADA Modem	Modem Hardware	SCADA	N/A
Hardy	Oxbow USGS Gauge	USGS_Oxbow		N/A	N/A
Croton	MBTCP Modbus Module - Modbus/TCP Comm's	MBTCP_Modbus	Modbus/IP Card	ProSoft/inRax	N/A
Croton	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Croton	U1 Power Monitor (Shark 100B)	U1_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100B-60-10-D2-X
Croton	U2 Power Monitor (Shark 100B)	U2_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100B-60-10-D2-X
Croton	U3 Power Monitor (Shark 100B)	U3_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100B-60-10-D2-X
Croton	U4 Power Monitor (Shark 100B)	U4_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100B-60-10-D2-X
Croton	Bus Power Monitor (Shark 100B)	Bus_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100B-60-10-D2-X
Croton	U1 Exciter Controller (Basler DECS-400)	U1_Exciter	Domain Controller	Basler Electric	DECS 400
Croton	U2 Exciter Controller (Basler DECS-400)	U2_Exciter	Domain Controller	Basler Electric	DECS 400
Croton	U3 Exciter Controller (Basler DECS-400)	U3_Exciter	Domain Controller	Basler Electric	DECS 400
Croton	U4 Exciter Controller (Basler DECS-400)	U4_Exciter	Domain Controller	Basler Electric	DECS 400
Croton	Battery Monitoring System PLC (Hindel Electric)	Battery_Sys_PLC	PLC	Click Koyo	N/A
Croton	U1 Exciter Controller Local HMI	U1_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Croton	U2 Exciter Controller Local HMI	U2_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Croton	U3 Exciter Controller Local HMI	U3_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Croton	U4 Exciter Controller Local HMI	U4_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Croton	U1 Governor PLC	U1 Governor	PLC	American Governor/Quint Power	L33ER
Croton	U1 Governor HMI	U1 Governor	HMI	American Governor/Weinteck	MT8071iE
Croton	U2 Governor PLC	U2 Governor	PLC	American Governor/Quint Power	L33ER
Croton	U2 Governor HMI	U2 Governor	HMI	American Governor/Weinteck	MT8071iE
Croton	U3 Governor PLC	U3 Governor	PLC	American Governor	L33ER
Croton	U3 Governor HMI	U3 Governor	HMI	American Governor/Weinteck	MT8071iE
Croton	U4 Governor PLC	U4 Governor	PLC	American Governor/Quint Power	L33ER
Croton	U4 Governor HMI	U4 Governor	HMI	American Governor/Weinteck	MT8071iE
Croton	Croton SCADA Modem	Croton SCADA Modem	Modem Hardware	Sixnet	BT-6901
Croton	Oak Grove USGS Gauge	USGS_Oak_Grove	N/A	N/A	N/A
Croton	Croton USGS Gauge	USGS_Croton	N/A	N/A	N/A
Rogers	MNET Modbus Module connects to USGS Gauge	MNET_Modbus	Modbus/IP Card	ProSoft/inRax	N/A
Rogers	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Rogers	U1 Power Monitor	U1_Power_Monitor	Monitor	Electro Industries GaugeTech	Shark 100-80-10-V3-D2-INP10-X
Rogers	U2 Power Monitor	U2_Power_Monitor	Monitor	Electro Industries GaugeTech	SHARK 100-60-10-V3-D2-INP10-X
Rogers	U3 Power Monitor	U3_Power_Monitor	Monitor	Electro Industries GaugeTech	SHARK 100-60-10-V3-D2-INP10-X
Rogers	U4 Power Monitor	U4_Power_Monitor	Monitor	Electro Industries GaugeTech	SHARK 100-60-10-V3-D2-INP10-X
Rogers	Breaker 166/Bus Power Monitor	Breaker_166_PM	Breaker	Electro Industries GaugeTech	SHARK 100

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Rogers	U1 Governor PLC	U1 Governor	PLC - Controller Module	American Governor	L33ER
Rogers	U1 Governor HMI	U1 Governor	HMI	American Governor/Maple Systems	N/A
Rogers	U2 Governor PLC	U2 Governor	PLC - Controller Module	American Governor	L33ER
Rogers	U2 Governor HMI	U2 Governor	HMI	American Governor/Maple Systems	N/A
Rogers	U3 Governor PLC	U3 Governor	PLC - Controller Module	American Governor	L33ER
Rogers	U3 Governor HMI	U3 Governor	HMI	American Governor/Maple Systems	N/A
Rogers	U4 Governor PLC	U4 Governor	PLC - Controller Module	American Governor	L33ER
Rogers	U4 Governor HMI	U4 Governor	HMI	American Governor/Maple Systems	N/A
Rogers	U1 Exciter Controller (Basler DECS-400)	U1_Exciter	HMI	Basler Electric	DECS-400
Rogers	U1 Exciter Controller Local HMI	U1_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Rogers	U2 Exciter Controller (Basler DECS-400)	U2_Exciter	Domain Controller	Basler Electric	DECS-400
Rogers	U2 Exciter Controller Local HMI	U2_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Rogers	U3 Exciter Controller (Basler DECS-400)	U3_Exciter	Domain Controller	Basler Electric	DECS-400
Rogers	U3 Exciter Controller Local HMI	U3_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD
Rogers	U4 Exciter Controller (Basler DECS-400)	U4_Exciter	Domain Controller	Basler Electric	DECS-400
Rogers	U4 Exciter Controller Local HMI	U4_Exciter_HMI	HMI	Basler Electric/Proface	PFXGP4401TAD

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Rogers	Rogers SCADA Modem	Rogers SCADA Modem	Modem Hardware	Sixnet	BT-6901
Rogers	Big Rapids USGS Gauge	USGS_Big_Rapids	Model Category	N/A	N/A
Rogers	Evart USGS Gauge	USGS_Evart	Model Category	N/A	N/A
Rogers	Stanwood USGS Gauge	USGS_Stanwood	Model Category	N/A	N/A
Hodenpyl	MNET Modbus Module connects to USGS Gauge	MNET_Modbus	Modbus/IP Card	ProSoft/inRax	MVI69-MNET
Hodenpyl	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Hodenpyl	U1 Power Monitor	U1_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hodenpyl	U2 Power Monitor	U2_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hodenpyl	Bus Power Monitor	Bus_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Hodenpyl	Breaker 266 Power Monitor	Breaker_266_PM	Monitor	Allen Bradley	Powermonitor 1000
Hodenpyl	Hodenpyl SCADA Modem	Hodenpyl SCADA Modem	Modem Hardware	N/A	N/A
Hodenpyl	Mesick USGS Gauge	USGS_Mesick	N/A	N/A	N/A
Hodenpyl	Sherman USGS Gauge	USGS_Sherman	N/A	N/A	N/A
Tippy	MNET Modbus Module connects to USGS Gauge	MNET_Modbus	Modbus/IP Card	ProSoft/inRax	MVI69-MNET
Tippy	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Tippy	U1 Power Monitor	U1_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Tippy	U2 Power Monitor	U2_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Tippy	U3 Power Monitor	U3_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Tippy	Bus Power Monitor	Bus_Power_Monitor	Monitor	Allen Bradley	Powermonitor 1000
Tippy	Spare Power Monitor	Spare_Power_Monitor	Monitor	N/A	N/A
Tippy	Tippy SCADA RTU	Tippy SCADA RTU	RTU	SCADA	N/A
Tippy	Hoxeyville USGS Gauge	USGS_Hoxeyville	N/A	N/A	N/A
Tippy	Mesick USGS Gauge	USGS_Mesick	N/A	N/A	N/A
Tippy	Wellston USGS Gauge	USGS_Wellston	N/A	N/A	N/A

Site Name	Device Name	Model Category/ Device Type	Model Category	Company/ Manufacturer	Model
Calkins Bridge	MNET Modbus Module connects to USGS Gauge	MNET_Modbus	Modbus/IP Card	ProSoft/inRax	N/A
Calkins Bridge	PLC Processor	PLC_Processor	PLC - Controller Module	Allen Bradley/Compact Logix	L33ER
Calkins Bridge	Unit 1 Power Monitor	Shark_PM_1	Monitor	Electro Industries GaugeTech	Shark
Calkins Bridge	Unit 2 Power Monitor	Shark_PM_2	Monitor	Electro Industries GaugeTech	Shark 100B
Calkins Bridge	Unit 3 Power Monitor	Shark_PM_3	Monitor	Electro Industries GaugeTech	Shark 100B
Calkins Bridge	Breaker 166 Power Monitor	Breaker_166_PM	Breaker	Electro Industries GaugeTech	Shark 100B
Calkins Bridge	Unit 1 Exciter Controller	DECS 250	Domain Controller	Basler Electric	DECS 250
Calkins Bridge	Unit 2 Exciter Controller	DECS 250	Domain Controller	Basler Electric	DECS 250
Calkins Bridge	Unit 3 Exciter Controller	DECS 250	Domain Controller	Basler Electric	DECS 250
Calkins Bridge	Station Power Monitor	Station Power	Monitor	Electro Industries GaugeTech	Shark 100-60-10-V3-D2-INP10-X
Calkins Bridge	Allegan SCADA Modem	Allegan SCADA Modem	Modem Hardware	Sixnet	BT-6901

Phones & Tablets

MEID/IMEI/ESN	Device Model	Mobile Number	Resource Owner	Date Added / Upgraded
353404351057549	Apple iPhone 14 - 128GB- UPGRADE	(989) 225-9890	Batts, Caleb D	11/2/23
357716587476680	Apple iPhone 12 - 64GB- UPGRADE	(616) 260-4291	Butler, Ryan P	7/11/23
353509878895559	Apple iPhone 12 - 128GB- UPGRADE	(231) 206-1624	Cain, Bryce T	4/9/21
990015595707670	Jetpack MiFi 8800L	(231) 233-9655	Cain, Bryce T	8/24/20
35006565756346	Apple iPAD PRO 11 256gb	(231) 396-9073	Carmer, Matthew E	12/16/20
990018920098559	Jetpack MiFi 8800L	(989) 751-3142	Cottick, Colby J	9/27/23
351156787819916	Apple iPhone 12 - 128GB	(231) 394-0444	Hankins, Sara A	6/17/21
990009319350404	Jetpack MiFi 8800L	(231) 429-8108	Hankins, Sara A	10/18/20
990016872264161	Jetpack MiFi 8800L	(231) 429-1131	Harrington, John J	9/23/21
356071121629373	Apple iPhone 14 - 128GB- UPGRADE	(231) 429-1854	Harrington, John J	9/27/24
352408232890888	Apple iPhone 13 - 128GB	(517) 262-8802	Henry, Thomas A	1/28/22
358041411975537	Apple iPhone 12 MINI - 64GB- UPGRADE	(231) 590-1729	Johnson, Stuart K	2/14/22
352849421374376	Apple iPhone 12 MINI - 128GB- UPGRADE	(989) 254-3852	Kania, Jonathon A	11/8/21
359824132922568	Apple iPhone 12 - 128GB	(989) 260-2346	Kayson, Justin E	5/19/21
990016879360533	Jetpack MiFi 8800L	(231) 519-7359	Martin, Kyle C	5/9/23
357508451343116	Apple iPhone 14 - 128GB- UPGRADE	(269) 208-8604	Martin, Kyle C	6/5/24
355427907986794	Apple iPAD PRO 11 512gb	(517) 416-0164	Mctaggart, Brooke K	2/2/21
353207330064076	Apple iPhone 13 - 128GB- UPGRADE	(616) 260-3853	Mctaggart, Brooke K	6/14/23
351224671174986	Apple iPhone 13 - 128GB- UPGRADE	(989) 239-1861	Mehlhose, Paul D	12/30/21
990015599509932	Jetpack MiFi 8800L	(231) 394-0842	Monroe, Adam J	9/1/21
359346672888751	Apple iPhone 13 - 128GB- UPGRADE	(231) 429-5033	Monroe, Adam J	5/24/23
353817902376599	Apple iPhone 15 - 128GB	(231) 429-5439	Wells, Hilary L	2/19/25

Employee PCs & Printers

Employee Full Name	Asset ID	Personnel Area Name	Model	Date Added / Upgraded
[redacted]	PC80383	Au Sable River-5 Channels	Dell Inc. Latitude 5450	2024
[redacted]	PC78846	Au Sable River-5 Channels	Dell Latitude 5440	2024
[redacted]	PC81038	Hardy Hydro Plant HQ	Dell Inc. Latitude 5450	2024
[redacted]	PC75425/Croton	JH Campbell Annex	Dell Latitude 5420	2022
[redacted]	PC77649	JH Campbell Annex	Dell OptiPlex 5000	2023
[redacted]	PC79161	JH Campbell Annex	Dell OptiPlex Tower Plus 7010	2024
[redacted]	PC72154	Au Sable River-5 Channels	Dell Latitude 5420	2021
[redacted]	FW16912	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2023
[redacted]	PC79762	Au Sable River-5 Channels	Dell Latitude 5440	2024
[redacted]	FW16930	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2023
[redacted]	PC74736	Bay City	Dell Latitude 5420	2022
[redacted]	PC71918	Croton	Dell Latitude 5420	PC71918 is in the process of being replaced with PC83166
[redacted]	PC83166	Croton	Dell Inc. Dell Pro 14 Plus PB14250	2025
[redacted]	PC77776	Cadillac SC	Dell Precision 5570	2023
[redacted]	PC77992	Cadillac SC	Dell Latitude 5430	2023
[redacted]	PC75105	Cadillac SC	Dell Latitude 5420	2022
[redacted]	PC73969	Au Sable River-5 Channels	Dell Latitude 5420	2021

Employee Full Name	Asset ID	Personnel Area Name	Model	Date Added / Upgraded
[redacted]	PC81826/202	Au Sable River-5 Channels	Dell OptiPlex 5000	PC72028 was replaced with PC81826/202
[redacted]	FW16160	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2022
[redacted]	FW16916	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2023
[redacted]	FW16937	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2023
[redacted]	FW16956	Au Sable River-5 Channels	Panasonic Corporation CF-33-2	2023
[redacted]	PC76245	Au Sable River-5 Channels	Dell OptiPlex 5000	2022
[redacted]	PC81826	Au Sable River-5 Channels	Dell Inc. Latitude 5450	2024
[redacted]	PC73243	Au Sable River-5 Channels	Dell Latitude 5420	2021
[redacted]	PC77978	Au Sable River-5 Channels	Dell Latitude 5430	2023
[redacted]	PC76016	Webber	Dell Latitude 5420	2022
[redacted]	PC72298	Au Sable River-5 Channels Dam/Parnall East	Dell Latitude 5420	2021
[redacted]	PC76578	Cadillac SC	Dell Latitude 5430	2023
[redacted]	PD2923	Cadillac SC	Apple iPad Pro 11-inch 256GB WiFi + Cellular Gen 3 Space Gray	2022
[redacted]	PC74980	Karn-Weadock Admin Building	Dell Latitude 5420	2022
[redacted]	PD1346	Au Sable River-5 Channels	Apple iPad Pro 9.7-inch 32gb WiFi - Black/Space Grey	2017
[redacted]	PC72802	Au Sable River-5 Channels	Dell Latitude 5420	2021

Employee Full Name	Asset ID	Personnel Area Name	Model	Date Added / Upgraded
[redacted]	PC80089	Cadillac SC	Dell Inc. Latitude 5450	2024
[redacted]	PC76777	Cadillac SC	Dell Latitude 5430	2023
[redacted]	PC79865	CW Tippy Hydro Plt	Dell Latitude 5440	2024
[redacted]	PC75918	Hardy	Dell Latitude 5420	2022
[redacted]	PC79743	Groveland SC	Dell Latitude 5440	2024
[redacted]	PC71657	MKG Norton Shores SC	Dell Latitude 5420	In the process of being replaced
[redacted]	PC77890	Webber	Dell OptiPlex 5000	2023
[redacted]	PC73380	Croton	Dell Latitude 5420	2021
[redacted]	PC82045	Au Sable River-5 Channels	Dell Inc. OptiPlex Tower Plus 7020	2025
[redacted]	PC74231	Au Sable River-5 Channels Dam	Dell Latitude 5420	2021
[redacted]	PC74972	Cadillac SC	Dell Latitude 5420	2022
[redacted]	PC82045	Au Sable River-5 Channels Dam	Dell Inc. OptiPlex Tower Plus 7020	2025
[redacted]	PC80016	MKG Norton Shores SC	Dell Inc. Latitude 5450	2024
[redacted]	PD2773	Cadillac SC	Microsoft Surface Pro 7+	2021
[redacted]	PC76879	Cadillac SC	Dell Latitude 5430	2023
[redacted]	PC68748	Au Sable River-5 Channels Dam	Dell OptiPlex 5070	2020 being replaced with PC82045
[redacted]	PC80016	MKG Norton Shores SC	Dell Inc. Latitude 5450	2024
[redacted]	FW15337	Croton Hydro	Panasonic Corporation CF-33-2	2022
[redacted]	HH01180	Calkins Bridge Hydro	Panasonic FZ55-1	2021
[redacted]	PC69508	Croton Hydro Plant	Dell Latitude 5401	2020
[redacted]	PC75903	Calkins Bridge Hydro	Dell Latitude 5420	2022
[redacted]	PC76495	Croton Hydro	Dell Latitude 5430	2023

Employee Full Name	Asset ID	Personnel Area Name	Model	Date Added / Upgraded
[redacted]	PC77151	CW Tippy Hydro Plt	Dell Latitude 5430	2023
[redacted]	PC77648	C. W. Tippy Hydro	Dell OptiPlex 5000	2023
[redacted]	PC79781	Croton Hydro Plant	Dell Latitude 5440	2024
[redacted]	PD1297	Calkins Bridge Hydro	Apple iPad Pro 9.7-inch 32gb WiFi - Black/Space Grey	2017

Transfer Notes

Transfer note 1: The Hyper-V VM server is subject to transfer to the Purchaser. Hyper-V Microsoft software will not transfer to the Purchaser and will need to be purchased by the Purchaser from the vendor.
Transfer note 2: This is not a functional Rubrik solution.
Transfer note 3: This is not a functional Nozomi solution.
Transfer note 4: Subject to non-transferable US Forest Service - Special Use Permit.
Transfer note 5: Ricoh printers will be factory reset.
Transfer note 6: Configuration will be removed.

Schedule 1.1(c)

FCC Licenses

Dam	VDR Document Number	Type	Authorization No./Call Sign	Grant Date	Effective Date	Expiration Date	Status	Radio Service
Multiple	11992	Federal Communications Commission Radio Station Authorization	WQIP705	03-08-2018	08-04-2023	04-08-2028	Active	IG – Industrial/ Business Pool, Conventional
Multiple	11991	Federal Communications Commission Radio Station Authorization	WPES364	03-27-2024	03-27-2024	04-21-2034	Active	IG – Industrial/ Business Pool, Conventional

Schedule 1.1(d)

Additional Diligence Materials

ID	Plant	Year	Name	Modified	Department	Document Type
13193	All Hydro Projects	2014	2014-01-01 Eyemed_VisionInsPolicy.pdf	8/26/2025 7:28	Other	Benefits
13192	All Hydro Projects	2017	2017-05-03 LTD.pdf	8/26/2025 7:28	Other	Benefits
13194	All Hydro Projects	2023	2023-01-01 DeltaDental.pdf	8/26/2025 7:28	Other	Benefits
13198	All Hydro Projects	2024	2024-01-01 ExpressScripts_Amendment_PrescriptionDrugProgram.pdf	8/26/2025 7:28	Other	Benefits
13196	All Hydro Projects	2024	2024-01-01 MetLife_BenefitPlan.pdf	8/26/2025 7:28	Other	Benefits
13195	All Hydro Projects	2025	2025-01-01 Healthy Blue HSA SBC.pdf	8/26/2025 7:28	Other	Benefits
13197	All Hydro Projects	2025	2025-01-01 Salaried Comm Blue SBC.pdf	8/26/2025 7:28	Other	Benefits
13199	All Hydro Projects	2025	2025-08-25 [redacted] NDASigned.pdf	8/26/2025 16:18	Other	RFP Information
13200	All Hydro Projects	2025	2025-08-26 [redacted] NDASigned.pdf	8/26/2025 16:19	Other	RFP Information
13202	All Hydro Projects	2025	2025-08-27 [redacted] NDA.pdf	8/27/2025 15:55	Other	RFP Information
13201	All Hydro Projects	2024	Retention Agreement Hydro Sale Final 12.6.2024 [redacted] Signed NK_Signed AM.pdf	8/27/2025 15:55	Other	RFP Information
13203	Hodenpyl	2025	2025-01-11 HOD_CEC_FERC_Notification_Oil Release.pdf	8/27/2025 16:03	Operations	Correspondence Record
13204	Foote	2025	Foote_TCOM.pdf	8/27/2025 16:13	Real Estate	Real Estate - Title Commitments
13205	Hardy	2025	Hardy_TCOM.pdf	8/27/2025 16:13	Real Estate	Real Estate - Title Commitments
13206	Mio	2025	Mio_TCOM.pdf	8/27/2025 16:13	Real Estate	Real Estate - Title Commitments
13207	Webber	2025	Webber_TCOM.pdf	8/27/2025 16:13	Real Estate	Real Estate - Title Commitments
13208	Rogers	2025	Rogers_TCOM.pdf	8/27/2025 16:13	Real Estate	Real Estate - Title Commitments
13191	Foote	2025	2025-07-29_FTE_CEII_RevisedExhibitsAandF_FERCApproval.pdf	8/28/2025 7:19	Licensing	Correspondence Record
13209	All Hydro Projects	2023	2023-04-01 Separation_Plan_SIGNED.pdf	8/28/2025 7:26	Other	RFP Information
13210	All Hydro Projects	2010	2010-04-01 MOA Att 24.pdf	8/28/2025 7:40	Operations	OMC Working Agreement
13211	All Hydro Projects	2025	2025-05-15 CE Signature_JointFundingAgreement.pdf	8/28/2025 7:46	Other	Other
13212	Mio;#Alcona;#Loud;#Five Channels;#Cooke;#Foote;#Hodenpyl;#Tippy;#Rogers;#Hardy;#Croton	1994	1994-11-04 USFS Rec Payment Agreement 95-065.pdf	8/29/2025 11:45	Licensing	Licensing
13213	Alcona	2025	2025-08-28 Alcona_WRP046277_riprap_Permit.pdf	8/29/2025 11:50	Environmental	Permitting
10835	Hodenpyl	2025	2025-01-27_HOD_CEII_Hoist12.10Notary_Complete.pdf	9/2/2025 13:55	Dam Safety	Correspondence Record
11206	Mio	2025	2025-03-28_MIO_CEII_Unit2Trip12.10_Complete.pdf	9/2/2025 13:55	Dam Safety	Correspondence Record
13214	All Hydro Projects	2025	2025-09-02 [redacted] NDA.pdf	9/2/2025 13:59	Other	RFP Information
13215	All Hydro Projects	2025	2025-09-02 [redacted] NDA.pdf	9/2/2025 13:59	Other	RFP Information
13220	Alcona	2025	2025-08-19_ALC_CEII_RIDMComments_FERCResponse.pdf	9/2/2025 13:59	Dam Safety	Correspondence Record
13221	Hardy	2025	2025-08-27_PRIV_HDY_FatalityUnRelatedtoProjectOps_Complete.pdf	9/2/2025 13:59	Dam Safety	Correspondence Record
13222	Cooke	2025	2025-08-20_CKE_CEII_Unit2Incident12.10Rpt_FERC_Email Response.10Rpt_FERC_EmailResponse.pdf	9/2/2025 13:59	Dam Safety	Correspondence Record
13223	Hardy	2025	2025-08-28_HDY_CEII_TrashRackInspectionReport_Complete.pdf	9/2/2025 13:59	Dam Safety	Correspondence Record
13224	All Hydro Projects	2025	FINAL PROJECT CANOE_EMPLOYEE LIST_08.28.2025.xlsx	9/2/2025 17:37	Other	RFP Information
13225	All Hydro Projects	2025	2025-05-15 JointFundingAgreement_Signature page_EGLE_CEC.pdf	9/3/2025 7:07	Other	Other
13226	All Hydro Projects	2024	2024-10-01 All_EGLE_USGS_Gauges_2025_JointFundingAgreeement_Signed_09-02-2025.pdf	9/3/2025 9:27	Other	Other

Schedule 2.1(b)

Excluded Assets

1. Excluded Contracts

1. Contract for Technical and Consulting Services dated as of April 25, 2024, by and between Seller and Advanced Support and Knowledge Services, LLC DBA Ask Services, a Michigan limited liability company, as amended from time to time.
2. Project Specific Wetland Mitigation Scope of Work and Mitigation Construction Plan dated as of January 4, 2022, by and between Seller and Crandell Environmental, LLC, as amended from time to time.
3. General Contract for Technical and Consulting Services dated as of January 23, 2020, by and between Seller and Eugene J. Gemperline, Inc., a California corporation, as amended from time to time.
4. Contract for Labor and Material dated as of September 19, 2024, by and between Seller and J.F. Brennan Company, a Wisconsin corporation, as amended from time to time.
5. Contract for Technical and Consulting Services dated as of August 13, 2024, by and between Seller and Niricson Software, Inc.
6. General Contract for Labor and Material dated as of October 29, 2013, by and between Seller and Petrotech, Inc., a Delaware corporation, as amended by the Contract Change Order No. 01 dated May 31, 2017, and as further amended by the Contract Change Order No. 02 dated May 23, 2017.
7. Contract for Technical and Consulting Services dated as of February 7, 2024, by and between Seller and Public Sector Consultants, Inc., a Michigan corporation, as amended from time to time.
8. Amended and Restated Generator Interconnection Agreement, effective as of February 1, 2024, by and between Seller, Michigan Electric Transmission Company, LLC, a Michigan limited liability company, and Midcontinent Independent System Operator, Inc. (formerly Midwest Independent System Transmission Operator, Inc.), a Delaware non-profit, non-stock corporation, as amended from time to time.
9. Contract for Technical and Consulting Services dated as of March 25, 2025, by and between Seller and Transnation Title Agency of Michigan Grand Rapids Division LLC, a Michigan limited liability company, as amended from time to time.
10. General Contract for Technical and Consulting Services dated as of July 3, 2017, by and between Seller and AECOM Technical Services of Michigan, Inc., a Michigan corporation, as amended from time to time.
11. General Contract for Labor and Material dated as of May 31, 2023, by and between Seller and American Electrical Testing Co., LLC, a Massachusetts limited liability company, as amended from time to time.
12. General Contract for Technical and Consulting Services dated as of February 2, 1998, by and between Seller and Barr Engineering Company, a Minnesota corporation, as amended by the Contract Change Order No. 01 dated as of November 6, 1998, as further amended by the Contract Change Order No. 2 dated as of February 3, 1999, as further amended by the Contract Change Order No. 3 dated as of October 5, 2000, as further amended by the Contract Change Order No. 4 dated as of January 22, 2003, as further amended by the Contract Change Order No. 5 dated as of December 7, 2003, as further amended by the Contract Change Order No. 6 dated as of January 20,

2006, as further amended by the Contract Change Order No. 7 dated as of January 7, 2008, as further amended by the Contract Change Order No. 8 dated as of June 16, 2008, as further amended by the Contract Change Order No. 9 dated as of February 26, 2009, as further amended by the Contract Change Order No. 10 dated as of February 1, 2010, as further amended by the Contract Change Order No. 11 dated as of February 22, 2011, as further amended by the Contract Change Order No. 12 dated as of January 23, 2012, as further amended by the Contract Change Order No. 13 dated as of April 2, 2014, as further amended by the Contract Change Order No. 14 dated as of February 18, 2025, and as further amended by the Contract Change Order No. 15 dated as of March 22, 2016.

13. General Contract for Technical and Consulting Services dated as of January 1, 2010, by and between Seller and Basinger Engineering, Inc., d/b/a Applied Geosciences and Engineering, Inc., as amended from time to time.

14. General Contract for Labor and Material dated as of May 9, 2014, by and between Seller and Central Michigan Contracting, Inc., a Michigan corporation, as amended from time to time.

15. General Contract for Technical and Consulting Services dated as of July 1, 2023, by and between Seller and Century A&E, Corporation, a Michigan corporation, as amended from time to time.

16. General Contract for Labor and Material dated as of May 1, 2020, by and between Seller and CONTI LLC, a Michigan limited liability company, as amended from time to time.

17. General Contract for Technical and Consulting Services dated as of April 29, 2024, by and between Seller and COWI North American Inc., a Delaware corporation, as amended from time to time.

18. General Contract for Labor and Material dated as of March 21, 2012, by and between Seller and Eastern Michigan University, a Michigan constitutional body corporate, as amended from time to time.

19. General Contract for Technical and Consulting Services dated as of February 1, 1996, by and between Seller and Environmental Consulting & Technology, Inc., a Delaware corporation licensed to practice professional engineering in the State of Michigan, as amended from time to time.

20. General Contract for Labor and Material dated as of April 10, 2015, by and between Seller and Fisher Contracting Company, a Michigan corporation, as amended from time to time.

21. General Contract for Technical and Consulting Services dated as of February 2, 2015, by and between Seller and FK Engineering, PLLC, a Michigan professional limited liability company, d/b/a FK Engineering Associates, as amended from time to time.

22. General Contract for Technical and Consulting Services dated as of April 10, 2014, by and between Seller and GEI Consultants of Michigan, P.C., a Michigan professional corporation, as amended from time to time.

23. General Contract for Labor and Material dated as of May 12, 2009, by and between Seller and Gemellaro Systems Integration, Inc., a Michigan corporation, as amended from time to time.

24. General Contract for Labor and Material dated as of June 14, 2001, by and between Seller and Grand Traverse Crane Corporation, as amended from time to time.

25. General Contract for Technical and Consulting Services dated as of September 29, 2003, by and between Seller and Holland Engineering, Inc., a Michigan corporation, as amended from time to time.

26. General Contract for Labor and Material dated as of November 1, 2013, by and between Seller and Hydro Tech, Inc., an Ontario Canada corporation, as amended from time to time.

27. General Contract for Labor and Material dated as of September 15, 2022, by and between Seller and Integrated Power Services, LLC, a Delaware limited liability company, as amended from time to time.

28. General Contract for Labor and Material dated as of October 11, 2016, by and between Seller and Caribou Services, Inc. d/b/a Jons to Go, a Michigan corporation, as amended from time to time.

29. General Contract for Technical and Consulting Services dated as of May 15, 2001, by and between Seller and Kleinschmidt Associates, Inc., as amended from time to time.

30. General Contract for Labor and Material dated as of January 4, 2016, by and between Seller and Macallister Machinery Co., Inc., a Michigan corporation, as amended from time to time.

31. General Contract for Labor and Material dated as of April 17, 2023, by and between Seller and Michels Construction Inc., a Delaware corporation, as amended from time to time.

32. General Contract for Labor and Material dated as of May 1, 2020, by and between Seller and Newkirk Electric Associates, Inc., a Michigan corporation, as amended from time to time.

33. General Contract for Labor and Material dated as of January 1, 2024, by and between Seller and Newkirk Electric Associates, Inc., a Michigan corporation, as amended from time to time.

34. General Contract for Labor and Material dated as of August 1, 1999, by and between Seller and Northern A-1 Services, Inc., a Michigan corporation, as amended from time to time.

35. General Contract for Labor and Material dated as of September 26, 2018, by and between Seller and Northern Machining & Repair, Inc., a Michigan corporation, as amended from time to time.

36. General Contract for Labor and Material dated as of March 21, 2016, by and between Seller and O'Donnells Earthworks, LLC, a Michigan limited liability company, as amended from time to time.

37. General Contract for Technical and Consulting Services dated as of February 1, 1996, by and between Seller and Soil and Materials Engineers, Inc., a Michigan corporation, as amended from time to time.

38. General Contract for Technical and Consulting Services dated as of November 15, 2021, by and between Seller and Testing Engineers & Consultants, Inc., a Michigan corporation, as amended from time to time.

39. General Contract for Technical and Consulting Services dated as of January 18, 2017, by and between Seller and Robert G. Ganser d/b/a Transformer Consulting Services, as amended from time to time.

40. General Contract for Technical and Consulting Services dated as of May 11, 2017, by and between Seller and West Consultants, Inc., a California corporation, as amended from time to time.

41. General Contract for Labor and Material dated as of September 5, 2012, by and between Seller and West Shore Services, Inc., a Michigan domestic profit corporation, as amended from time to time.

42. General Contract for Technical and Consulting Services dated as of July 1, 2023, by and between Seller and Wightman & Associates, Inc., a Michigan corporation, as amended from time to time.

43. General Contract for Technical and Consulting Services dated as of December 5, 2013, by and between Seller and Golder Associates, Inc., a Georgia corporation, as amended from time to time.

44. Contract for Labor and Material dated as of April 1, 2025, by and between Seller and Great Lakes Land Clearing LLC, a Michigan limited liability company, as amended from time to time.

45. Contract for Foote Hydro Trash Rack Cleaning System dated as of December 13, 2021, by and between Seller and ATLAS-SSI, Inc., a Mississippi corporation, as amended by the Contract Change Order No. 1 dated as of December 14, 2024.

46. Contract dated as of July 6, 2021, by and between Seller and Wonderware North d/b/a Q-Mation, as amended from time to time.

47. Contract for Technical and Consulting Services dated as of September 20, 2023, by and between Seller and Clear Energy Brokerage & Consulting, LLC, as amended from time to time.

48. Master Leaseback Agreement (Cash-Flowing) dated as of December 5, 2023, between Seller and Vertical Bridge Towers, IV, LLC, a Delaware limited liability company.

49. Master Leaseback Agreement (Non-Cash-Flowing) dated as of December 5, 2023, between Seller and Vertical Bridge Towers, IV, LLC, a Delaware limited liability company.

50. Contract for Labor and Material dated as of January 9, 2024, by and between Seller and Hardman Construction, Inc., a Michigan corporation, as amended by the Contract Change Order No. 01 dated as of November 18, 2024.

51. Contract for Labor and Material dated as of January 22, 2024, by and between Seller and Hardman Construction, Inc., a Michigan corporation, as amended by the Contract Change Order No. 01 dated as of April 12, 2024, as further amended by the Contract Change Order No. 02 dated as of August 30, 2024, and as further amended by the Contract Change Order No. 03 dated as of November 19, 2024.

52. Contract for Labor and Material dated as of March 31, 2023, by and between Seller and Hydro Tech USA, Inc., a Delaware corporation, as amended by the Contract Change Order No. 01 dated as of January 3, 2024, as further amended by the Contract Change Order No. 02 dated as of October 1, 2024, and as further amended by the Contract Change Order No. 03 dated as of November 20, 2024.

2. Excluded Permits

1. The Excluded Permits set forth on Schedule 5.13(c) are hereby incorporated by reference.
2. The Excluded Permits set forth on Schedule 5.14(a) are hereby incorporated by reference.

3. Excluded Assets

IT OT – Hardware

Site	Name	Description	Cyber Asset Type	Manufacturer	OS Version	Reseller
Parnall Basement	hydrotsp1	Hyper-V VM	Server	N/A	Windows 2019	N/A
Parnall Basement	hydrotrp1	Hyper-V VM	Server	N/A	Windows 2019	N/A

IT OT – Software

Site	Software Name	Software Publisher	Asset Type
Mio	Hyper-V (see Transfer Note 1)	Microsoft Corporation	N/A
Mio	Windows Server 2019 Standard	Microsoft Corporation	Windows
Mio	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Mio	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Mio	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Mio	AVEVA InTouch HMI 2023 R2 P01	AVEVA Software, LLC	Windows
Mio	AVEVA Historian Client 2023 R2 P01	AVEVA Software, LLC	Windows
Mio	AVEVA Application Server 2023 R2 P01	AVEVA Software, LLC	Windows
Mio	AVEVA Historian 2023 R2 P01	AVEVA Software, LLC	Windows
Calkins Bridge	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Calkins Bridge	Windows Server 2019 Standard	Microsoft Corporation	Windows
Calkins Bridge	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Calkins Bridge	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Calkins Bridge	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Calkins Bridge	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Calkins Bridge	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows

Site	Software Name	Software Publisher	Asset Type
Calkins Bridge	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Calkins Bridge	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Webber	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Webber	Windows Server 2019 Standard	Microsoft Corporation	Windows
Webber	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Webber	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Webber	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Webber	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Webber	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Webber	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Webber	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Rogers	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Rogers	Windows Server 2019 Standard	Microsoft Corporation	Windows
Rogers	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Rogers	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Rogers	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Rogers	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Rogers	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Rogers	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Rogers	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Foote	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Foote	Windows Server 2019 Standard	Microsoft Corporation	Windows

Site	Software Name	Software Publisher	Asset Type
Foote	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Foote	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Foote	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Foote	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Foote	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Foote	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Foote	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Alcona	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Alcona	Windows Server 2019 Standard	Microsoft Corporation	Windows
Alcona	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Alcona	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Alcona	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Alcona	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Alcona	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Alcona	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Alcona	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Loud	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Loud	Windows Server 2019 Standard	Microsoft Corporation	Windows
Loud	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Loud	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Loud	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Loud	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows

Site	Software Name	Software Publisher	Asset Type
Loud	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Loud	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Loud	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Cooke	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Cooke	Windows Server 2019 Standard	Microsoft Corporation	Windows
Cooke	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Cooke	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Cooke	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Cooke	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Cooke	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Cooke	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Cooke	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Tippy	Hyper-V (see transfer note 1)	Microsoft Corporation	N/A
Tippy	Windows Server 2019 Standard	Microsoft Corporation	Windows
Tippy	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Tippy	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Tippy	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Tippy	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Tippy	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Tippy	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Tippy	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Croton	Hyper-V (see Transfer Note 1)	Microsoft Corporation	N/A

Site	Software Name	Software Publisher	Asset Type
Croton	Windows Server 2019 Standard	Microsoft Corporation	Windows
Croton	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Croton	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Croton	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Croton	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Croton	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Croton	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Croton	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Hardy	Hyper-V (see Transfer Note 1)	Microsoft Corporation	N/A
Hardy	Windows Server 2019 Standard	Microsoft Corporation	Windows
Hardy	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Hardy	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Hardy	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Hardy	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Hardy	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Hardy	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Hardy	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
5 Channels	Hyper-V (see Transfer Note 1)	Microsoft Corporation	N/A
5 Channels	Windows Server 2019 Standard	Microsoft Corporation	Windows
5 Channels	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
5 Channels	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows

Site	Software Name	Software Publisher	Asset Type
5 Channels	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
5 Channels	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
5 Channels	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
5 Channels	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
5 Channels	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Hodenpyl	Hyper-V (see Transfer Note 1)	Microsoft Corporation	N/A
Hodenpyl	Windows Server 2019 Standard	Microsoft Corporation	Windows
Hodenpyl	Microsoft SQL Server 2019 (64-bit)	Microsoft Corporation	Windows
Hodenpyl	Microsoft SQL Server 2012 Native Client	Microsoft Corporation	Windows
Hodenpyl	Microsoft Office Professional Plus 2016	Microsoft Corporation	Windows
Hodenpyl	AVEVA Historian Client 2023	AVEVA Software, LLC	Windows
Hodenpyl	AVEVA InTouch HMI 2023 P03	AVEVA Software, LLC	Windows
Hodenpyl	AVEVA Historian 2023 P03	AVEVA Software, LLC	Windows
Hodenpyl	AVEVA Application Server 2023 P03	AVEVA Software, LLC	Windows
Croton	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Rogers	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
5 Channels	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Cooke	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Hardy	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Tippy	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Webber	Windows Server 2019 Datacenter	Microsoft Corporation	Windows

Site	Software Name	Software Publisher	Asset Type
Mio	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Alcona	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Calkins Bridge Hydro	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Loud	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Hodenpyl	Windows Server 2019 Datacenter	Microsoft Corporation	Windows
Foote	Windows Server 2019 Datacenter	Microsoft Corporation	Windows

Applications

Application	Use
AVEVA PI Historian	Historian data aggregation and reporting
SAP	HR/Timesheets
SAP	Work Management
SAP	Asset Management
SAP	Finance
SAP	Supply Chain
SAP	Project System
eSOMS	Lockout/Tagout
eSOMS	Digital Logbook
Primavera P6	Scheduling
Unifier	Enterprise Project Management
GeoTab	Vehicle Tracking
SuccessFactors	Learning and Development
SAP Ariba	Contract Management
Microsoft Office	Outlook, Word, PowerPoint, excel, etc.
DevonWay	Regulatory Commitment Tracking
Enviance	Regulatory Commitment Tracking
ProjectWise	Drawings and Engineering
Sharepoint	Operating Procedures, Dam Safety, etc.
Generation Portal	Used for MISO forecasting
Power Apps	Various applications (for example Seller's standard work app, emergency action plan – stored in Sharepoint)
Power BI	Reporting
OneDrive	File storage for users
GADS	Tracks generation outages (hyrdos supply data)

Acre AccessIt Universal	Security access control software
Rubrik	Backup / recovery / ransomware solution (software & hardware) per Schedule 1.1 (b) Tangible Personal Property, Transfer note 2
Nozomi	Part of vulnerability mgmt. solution per Schedule 1.1 (b) Tangible Personal Property, Transfer note 3
Security Tools	Microsoft Azure Connected Machine Agent, Microsoft Monitoring Agent (Azure Monitor Agent), Microsoft Defender for Endpoint, Carbon Black App Control Agent, Vmware Carbon Black Edr Sensor and RSA MFA Agent For Microsoft Windows, CyberArk

Circuits

Site	Physical Location	Physical address	Physical Location	Vendor	Circuit ID	Transport Type	Speed/ Size
Alcona Dam	Parnall Data Center	1945 W Parnall Rd	Datacenter	Everstream	EVM-ETHS-OF-42838	ETN	50mb
Alcona Dam	Grand Rapids Switch DC	4200 60th St SE	Datacenter	Everstream	EVM-ETHS-OF-42839	ETN	50mb
Calkins Bridge Hydro	Parnall Data Center	1945 W Parnall Rd	Datacenter	Everstream	EVM-ETHS-ON-45102	ETN	50mb
Calkins Bridge Hydro	Switch Data Center	4200 60th St. SE	Datacenter	Everstream	EVM-ETHS-ON-45101	ETN	50mb
Cooke	Parnall DC	1945 W Parnall	IMC	Everstream	1C-ETHS-ON-12601	ETN	100MB
Cooke	Battle Creek DC	311 E Michigan Ave.	IMC	Everstream	1C-ETHS-ON-12602	ETN	100MB
Croton Plant	Grand Rapids Service Center	4000 Clay Ave	IMC	AT&T	AS/KRFN/001630/MB	ETN	100MB
Foote	Parnall	1945 W Parnall	IMC	Everstream	1C-ETHS-ON-12603	ETN	100MB
Foote	Battle Creek	311 E Michigan Ave.	IMC	Everstream	1C-ETHS-ON-12604	ETN	100MB
Five Channels	Parnall	N/A	N/A	Everstream	COM/06434.1/ELAN.001	WAN-ETN	100MB
Five Channels	Battle Creek	N/A	N/A	Everstream	COM/06434.1/ELAN.002	WAN-ETN	100MB
Hardy	N/A	N/A	N/A	AT&T	AS/KRFN/001799/MB	WAN-ETN	100MB

Site	Physical Location	Physical address	Physical Location	Vendor	Circuit ID	Transport Type	Speed/ Size
Hodenpyl	Switch Data Center	4200 60th St SE, Kentwood MI	N/A	Everstream	EVM-ETHS-OF-44225	ETN	50MB
Hodenpyl	Parnall Data Center	1945 W Parnall Rd, Jackson MI	N/A	Everstream	EVM-ETHS-OF-44226	ETN	50MB
Mio	Grand Rapids Data Center	4200 60th St SE	N/A	Everstream	EVM-ETHS-ON-44231	ETN	50MB
Mio	Parnall Data Center	1945 W Parnall Rd	N/A	Everstream	EVM-ETHS-ON-44232	ETN	50MB
Rogers	Parnall Data Center	N/A	N/A	Everstream	EVM-ETHS-OF-12737	Ethernet	20MB
Rogers	Battle Creek Data Center	311 E Michigan	N/A	Everstream	EVM-ETHS-OF-12738	Ethernet	20MB
Tippy	Parnall Data Center	1945 Parnall Ave	IMC	Everstream	EVM-ETHS-OF-33135	WAN	100MB
Tippy	Switch Data Center	4200 60th St. SE	IMC	Everstream	EVM-ETHS-OF-33134	WAN	100MB
Webber	Parnall Data Center	1945 W. Parnall	IMC	Everstream	EVM-ETHS-OF-45098/EVM-ETHS-OF-45099	N/A	N/A

Security – Control Boards

Site	Asset ID	Serial Number	Description
Alcona	1259995320	Access Control & Security	Access Control & Security: INCLUDES - (1) EP1502 SYSTEM CONTROL PROCESSOR / DUAL READER BOARD
Alcona	1862330603	INTAKE DECK ENTRY DOOR	(1) RS2 MR-52 Dual Reader Board
Alcona	1867877499	POWER HOUSE ACS CNTL	Access Control Additions on Power House (1) RS2 MR52 Dual Reader Module
Calkins Bridge	1421492546	Hydro Plant Sec	HYDRO PLANT SECURITY SYSTEM (1) SYSTEM CONTROL PROCESSOR / DUAL READER BOARD
Calkins Bridge	1935656638	POWER HOUSE ACS CNTL	SCP
Cooke	1259917475	POWER HOUSE ACS CNTL	CCTV SECURITY EQUIPMENT - INCLUDES: ACCESS CONTROL & SECURITY MONITORING: (1) EP1502 SYSTEM CONTROL PROCESSOR/DUAL READER BOARD AND ASSOCIATED EQUIPMENT
Cooke	1867487072	POWER HOUSE ACS CNTL	Access Control Additions on Power House (1) RS2 MR52 Dual Reader Module
Croton	1261025160	Hydro Plant Security	Hydro Plant Security INCLUDES: (1) RS2 MR-52 DUAL CARD READER
Croton	1861220049	(2) AWID CARD READERS	RS2 MR-52 Dual Reader Board (2)
Five Channels	1862138930	(2) AWID CARD READERS	RS2 MR52 Dual Reader Module
Five Channels	1970465453	CARD ACCESS MAINT BUILD	MR52s
Five Channels	1827020436	ADMIN BLD	SCP and MR52s
Five Channels	1866750786	ACCESS CONT/GATE SYSTEM	(1) RS2 MR-52 Dual Reader Board

Site	Asset ID	Serial Number	Description
Five Channels	977674621	Access Control & Security	SCP MR52S
Foote	1862138953	(2) AWID CARD READERS	Located on Power House (1) RS2 MR52 Dual Reader Module
Foote	1259995399	Access Control & Security	HYDRO PLANT SECURITY SYSTEM: (1) EP1502 SYSTEM PROCESSOR / DUAL READER BOARD
Hardy	1861366514	(2) AWID CARD READERS	East Powerhouse Entry Door - (1) RS2 MR52 Dual Card Reader Board
Hardy	1845086324	Vehicle Gate Card Readers	Update to RS2 Access control/RS2 MR-52 Dual Reader
Hodenpyl	1935656559	Access Control & Security	SCP and MR52s
Hodenpyl	1259917675	Hodenpyl Power plant	Hodenpyl Power plant Security System Includes: (1) RS2 DP1502 System Control Processor / Dual reader board
Loud	1259917829	Access Control & Security	ACCESS CONTROL & SECURITY MONITORING - INCLUDES: (1) ES2 EP1502 SYSTEM CONTROL PROCESSOR / DUAL REDER BOARD (1) MR52 W/ CARD READER
Mio	1866934669	POWERHOUSE ACCESS CNTRL	Mio Dam Access Control & CCTV Additions - 2015 (1) RS2 MR-52 Dual Reader Module
Rogers	1858813355	(2) CARD READERS	(1) RS2 MR-52 Dual Reader Board GSI Quotation #144316
Rogers	980592751	Access Control & Security	COMPLETE SECURITY SYSTEM INCLUDING CARD ACCESS & CCTV
Webber	1259920224	Vehicle Gate Security Sys	Vehicle Gate Security Sys Includes MR52
Webber	1938342159	(3) CARD READ	SCP and MR52s

Phones & Tablets

MEID/IMEI/ESN	Device Model	Resource Owner
990016871136816	Jetpack MiFi 8800L	Justin Kayson

Plain Old Telephone Service (POTS) Lines

Location Name	Address	City	Description	Phone #	Carrier
Calkins Bridge	4130 ALLEGAN DAM RD	ALLEGAN	Allegan Hydro	2696736717	Granite
Croton	8299 S CROTON HARDY DR	CROTON TWP	Croton Hydro	2316526605	Granite
Alcona	3300 ALCONA DAM DR	GLENNIE	Alcona Dam	9897352360	CenturyLink
Mio	67 POND DR	MIO	MIO DAM	9898265655	Granite
Hardy	6928 E 36TH ST	NEWAYGO	Hardy Dam Gate Phone	2316521559	AT&T
Hardy	6928 E 36TH ST	NEWAYGO	Hardy Dam	2316526652	Granite
Cooke	1220 COOKE DAM RD UNIT C	OSCODA	Cooke Dam	9893626336	Granite
Foote	2002 REA RD UNIT C	OSCODA	Foote Hydro Plant	9897399489	Granite
Loud Dam	6051 N M 65	OSCODA	Loud Dam	9895586188	CenturyLink
Five Channels	6051 N M 65	Oscoda	Loud Dam	9897282991	CenturyLink
Tippy	1325 TIPPY DAM RD	WELLSTON	Main Incoming Line	2318484064	Kaleva

Radio Equipment

Vehicle Radio Equipment by Project	Description	Radio Serial Number
Tippy Project		
	28018_PU 3/4T 4WD 8 (2008 SILVERADO 2500)	A40209227826
	28381_PU 4WD 8 EXT (2021 F250)	A40209231310
	28551_PU 4WD (2021 F250)	A40209226801
	28980_PU 3/4T 4WD 8 (2010 Silverado 2500)	A40209231556
	54052_TRUCK DUMP MED W/UNDERBODY PLOW (2012 7400)	A40209231574
Hardy Project		
	28081_PU 4WD EXT (F250)	A40209231504
	38622_PU 3/4T 4WD 8 (SIERRA 2500)	A40209227822
	38632_PU 3/4T 4WD 8 (SIERRA 2500)	A40209226604
	27060_SVC 4WD EXT (2020 F350)	A40209226519
Calkins Bridge Project		
	36083_TRUCK SVC 1T 4WD EXT (2013 SIERRA 3500)	A40209209783
General		
	28221_PU 4WD EXT (2021 Ford F150)	A40209231508
	22131_PU 1/2T 2WD 6.5 (2011 Silverado 1500)	A40209223136
	22083_PU 1/2T 4WD 6.5 EXT (2013 Sierra 1500)	A40209210089
	30379_PU 4WD EXT (2019 Ford F150)	A40209227616
Fixed Radios at Projects (Radio Control Stations)		**Radio Serial Number**
Hardy Project	Kenwood VM5930 Fixed Radio	X93011335430156
Croton Project	Kenwood VM5930 Fixed Radio	X93011401630002
Alcona Project	Kenwood VM5930 Fixed Radio	X93011401630003
Five Channels Project	Kenwood VM5930 Fixed Radio	X93011401630005
Cooke Project	Kenwood VM5930 Fixed Radio	X93011406530141
Tippy Project	Kenwood VM5930 Fixed Radio	X93011406530171
Loud Project	Kenwood VM5930 Fixed Radio	X93011406530327
Foote Project	Kenwood VM5930 Fixed Radio	X93011406530342
Mio Project	Kenwood VM5930 Fixed Radio	X93011410030221
Croton Project	AG Pro Quint Cellular Amplifier	461004B5012934090
Calkins Bridge Project	AG Pro Quint Cellular Amplifier	461004B3012730253
Webber Project	AG Pro Quint Cellular Amplifier	461004b5012934319
Rogers Project	AG Pro Quint Cellular Amplifier	461004B5013170467

Hardy Project	AG Pro Quint Cellular Amplifier	461004B5013392728
Croton Project	AG Pro Quint Cellular Amplifier	461004B5013299471
Cooke Project	AG Pro Quint Cellular Amplifier	461004B5013349636
Foote Project	AG Pro Quint Cellular Amplifier	461004D0314179480
Alcona Project	AG Pro Quint Cellular Amplifier	461034F0915223419
Mio Project	AG Pro Quint Cellular Amplifier	461004B5012934096
Tippy Project	Pro 70 Plus Cellular Amplifier	461034F0915223454
Loud Project	Office 200 Cellular Amplifier	102403628

Transfer Note 1: As indicated in Schedule 1.1(b), Tangible Personal Property, the identified Hyper V VM servers in that Schedule 1.1(b) will transfer to Purchaser. However, the Hyper-V Microsoft software will not transfer to Purchaser and will need to be purchased by Purchaser from the vendor.

Alcona Project:

In Existing Substation	199 circuit switcher Transformer bank 1 All PTs, conductor, and connectors inside the substation unless noted otherwise
Not in Existing Substation	166 and 126 Breaker 162, 124, and 125 Disconnect switches Bus PTs 4.8kV main bus and by-pass bus work for 126 breaker 4.8kV from plant wall to distribution transformers 138kV transmission lines to the 199 4.8kV distribution circuit to distribution transformers. Distribution bypass equipment to bypass the plant proper

Cooke Project:

In Existing Substation	199 circuit switcher 262, 262A, 1-2 disconnect switch 1-5 fused switch Transformer bank 1 Transformer bank 2 Voltage regulator 1-6 Breaker All PTs, conductor, and connectors inside the substation unless noted otherwise
Not in Existing Substation	46kV transmission lines to the 199 8.3kV distribution circuit.

Croton Project:

In Existing Substation	138kV substation is owned by ITC 46kV substation is owned by Seller unless noted in plant Right of ways into and out of the substation

Not in Existing Substation	None

Five Channels Project:

In Existing Substation	199 circuit switcher Transformer bank 1 All PTs, conductor, and connectors inside the substation unless noted otherwise 2.4kV fuse and distribution line
Not in Existing Substation	46kV transmission lines to the 199 2.4kV distribution circuit.

Foote Project:

In Existing Substation	399, 362, 364, 365, 162, 1-2 Switches 299 and 1-5 Fused Switch Transformer Bank 1 Transformer Bank 2 Transformer Bank 3 366 and 1-6 Breaker All 46kV conductors and connectors All 8.32kV conductors and connectors 4.8kV conductors and connectors in sections containing 366 breaker and transformers 1, 2, and 3
Not in Existing Substation	46kV transmission lines to the 199 8.3kV distribution circuit.

Hodenpyl Project:

In Existing Substation	46kV substation unless noted on plant side including station power transformer and disconnect switches
Not in Existing Substation	46kV transmission lines to the 1388, 1188, 1277, and 1288 138kV line (ITC) to the 199 breaker

Loud Project:

In Existing Substation	1373, 1371, 1182, 1184, 1271, 1273, and 152 disconnect switch 1377, 1188, and 1277 Breakers 156 Circuit Switcher Cap Bank #1 Station Power fused disconnect and transformer Station Power transformer secondary fused switch All PTs, conductor, and connectors inside the sub unless noted in plant ownership
Not in Existing Substation	46kV transmission lines to the 1377, 1188. and 1277 breakers

Mio Project (METC Owned):

In Existing Substation	138kV substation unless noted on plant side
Not in Existing Substation	None

Rogers Project:

In Existing Substation	182, 184, 282, 284, and 199 disconnect switch 188 and 288 Breakers All PTs, conductor, and connectors inside the sub
Not in Existing Substation	46kV transmission lines to the 188 and 288 breakers

Tippy Project (METC Owned):

In Existing Substation	171, 173, 282, 284, 382, 284, 271, and 273 disconnect switch 177, 288, 388, and 277 Breakers All PTs, conductor, and connectors inside the sub
Not in Existing Substation	138kV transmission lines to the 177, 277, 288 and 388 breakers

Webber Project:

In Existing Substation	171, 173, 182, 184 Disconnect switches 177 and 188 breakers PTs, conductor, and connections associated with the Ionia No 2 line and the David line
Not in Existing Substation	46kV transmission lines to the 188 and 177 breakers

Caulkins Bridge Project:

In Existing Substation	None
Not in Existing Substation	Up to pole where 191 fused switch and alternative station power source is located Right of way (see note)

Schedule 2.1(d)

Excluded Liabilities

(iv)

None.

(xi)

None.

Schedule 3.1(e)

Title and Survey (Encumbrances)

1. Croton Project Shoreline Property Easement: Seller has ongoing actions to ensure existing structures along the Croton Project impoundment are consistent with FERC Operating License Land Management Plan requirements. Seller has discovered that approximately twenty-five (25) parcels adjacent to the Croton Project pond currently have installed structures on Seller-owned property along the shoreline (mainly docks, seawalls, and stairs) that Seller has not found a previous record of approval under the FERC Operating License Land Management Plan licensing program. FERC staff is aware of these structures and has not issued a violation or other finding of non-compliance.

2. Item #1 on Schedule 7.7(d) is hereby incorporated by reference.

Schedule 4.1(j)

Purchaser Regulatory Approvals

1. Purchaser obtaining market-based rate authorization for wholesale sales of electric energy, capacity and ancillary services from FERC.

2. Purchaser being recognized as Market Participant (as defined in the MISO Rules) by MISO.

Schedule 5.3(a)

Litigation

1. Consumers Energy has periodically received emails and phone calls from a neighboring landowner at the Calkins Bridge Project (Mr. Ken and Mrs. Kathy Yonker) containing various complaints on operations at Calkins Bridge up to and including alleged property damage related to dam operations. Mr. Yonker has made past claims at FERC related to these claims, and FERC has not found a valid basis for those claims. Seller has approximately seventeen (17) instances of correspondence from Mr. Yonker since 2020 and has responded in writing twice since 2021, denying all claims made against Seller.

2. Seller has issued a license to River Queen Excursions LLC to operate a paddle boat tourism business (the "Paddle Boat") at the Foote Project. The Paddle Boat was partially submerged in March 2025. Recovery efforts resulted in significant damage to the Paddle Boat, which is currently beached on the shore of the Foote Project pond. Oscoda Township is currently pursuing a court order to compel the removal of the paddleboat, which may result in its destruction. It is possible that River Queen Excursions LLC will pursue claims related to damage to the Paddle Boat and its tourism business against the Township and Seller, although Seller does not believe that there is validity to such claims.

3. Seller is aware that State of Michigan agencies and stakeholder groups have claims that operations at the Alcona, Foote, Mio, Croton, Tippy, and Hodenpyl Projects result in downstream waters exceeding temperature limits contained in the FERC Operating Licenses. Those groups have petitioned FERC to find Seller in violation of those water quality standards, by FERC has officially responded that no such violation has occurred. The Michigan Hydro Relicensing Coalition has indicated an intent to raise this issue during any relicensing action taken with respect to the above-referenced Projects.

Schedule 5.5

Seller Third Party Consents

1. The following contracts cannot be assigned by Seller to Purchaser without the prior written consent of the contract counterparty:

   a. Contract for Hardy Dam Rehabilitation dated as of January 3, 2025, by and between Seller and Kokosing Industrial, Inc.*
   b. Large Generator Interconnection Agreement (LGIA) between Seller, Michigan Electric Transmission Company and Midcontinent Independent System Operator, Inc. (formerly Midwest Independent System Transmission Operator, Inc.), effective July 25, 2008.

2. Release of the Projects and Project Assets from that certain Indenture dated as of September 1, 1945, between Consumers Power Company (now known as Consumers Energy Company) and City Bank Farmers Trust Company (now held by The Bank of New York Mellon, successor trustee) and all supplemental indentures thereto, as may be further amended and/or supplemented from time to time.

3. Right of first refusal of METC pursuant to Section 10.1 of the Amended and Restated Easement Agreement dated April 29, 2002, between Seller and Michigan Electric Transmission Company.

4. The approvals or consents required for transfer of the Material Environmental Permits pursuant to Part II of Schedule 5.13(c).*

5. The approvals or consents required for transfer of the Material Permits pursuant to Part II of Schedule 5.14(a).*

6. Consents or approvals required to transfer the CPNodes for each of the Projects.

* The Seller Required Consents marked with the asterisk (*) above may not be obtained by the Closing Date pursuant to Section 7.12(l) and Section 7.15(b) of the Agreement, and therefore may be delivered following the Closing.

Schedule 5.6(a)

Project Assets (Title)

Part I

None.

Part II

1. The Hodenpyl Project's Unit 2 ("Hodenpyl Unit 2") is out of service ("OOS") as of the Effective Date. Hodenpyl Unit 2 has a wiped thrust bearing and the unit is planned to be overhauled to return such unit back to service. The scope of work is expected to include the replacement of bearings, machining the shaft, converting to wooden thrust bearing, wicket gate refurbishment and any additional items that are identified during the scope of work. Hodenpyl Unit 2 is expected to be transferred OOS at Closing.

2. The Hodenpyl Project's spillway hoists are being replaced under warranty repair. New hoists are scheduled to be installed in 2025.*

3. The Rogers Project's Unit 2 has a wiped bearing. Repairs are scheduled to be completed in 2025.*

4. The Loud Project's Unit 1 has a governor pressure issue. Such issue is under warranty with repairs scheduled to be completed in 2025.*

5. The Calkins Bridge Project's Unit 1 rebuild (and turbine runner replacement) is ongoing. Such rebuild is scheduled to be completed in 2025.*

6. The Cooke Project's Units 1, 2, and 3 head gates replacement is ongoing. Such replacement is expected to be completed in 2025. *

7. The Tippy Project jib crane requires warranty work which is scheduled to be completed in 2025.*

8. The Hardy Project does not meet current criteria for spillway capacity. The spillway remediation scope of work is expected to include modification of the auxiliary spillway, compaction of the embankment and restoration of the spillway crest, a new pedestrian bridge to the intake tower, and improvements to the splash wall. Such remediation work is not expected to be completed prior to Closing.

9. The Hardy Project's Unit 2 ("Hardy Unit 2") is OOS. Hardy Unit 2 has a wiped thrust bearing that may require additional work scope to return such unit back to service. Hardy Unit 2 is expected to be transferred OOS at Closing.

10. The Alcona Project's Unit 2 ("Alcona Unit 2") is operational but may require repairs. The scope of work for such repairs is expected to include a new thrust bearing and any additional items that are identified during such thrust bearing work. Such repair of Alcona Unit 2 is not expected to be completed prior to Closing.

11. The Rogers Project does not meet current criteria for spillway capacity. The remediation plan for the spillway to meet the current criteria for spillway capacity is under evaluation and any necessary work is not expected to be completed prior to Closing.

12. The Webber Project's Unit 1 ("Webber Unit 1") is operational but may require repairs to replace a runner and overhaul the unit. The work scope for such repairs is expected to include the: (i) replacement of bearings, wicket gates, runner, draft tube, (ii) shaft machining, and (iii) any additional items that are identified during such scope of work. Such repair of Webber Unit 1 is not expected to be completed prior to Closing.

13. The Hodenpyl Project's Unit 1 is operational but exhibits an oil release due to a vacuum condition that is occurring at such unit. As of the Effective Date, Seller has been unable to resolve such condition and is evaluating the installation of a wood (Lignum vitae) bearing to remediate the oil release. Such remediation work is not expected to be completed prior to Closing.

14. The Mio Project's Unit 1 is operational but exhibits an oil release due to a leaking wicket-gate arm pit that is occurring at such unit. Remediation of the leaking wicket-gate arm pit is not expected to occur prior to Closing.

15. The Alcona Project does not meet current criteria for spillway capacity. Evaluation of the Project's spillway, in relation to the current criteria for spillway capacity, includes the Risk Informed Decision Making Implementation method of dam safety evaluation which is expected to influence remediation options for the Project's auxiliary spillway. At the Project, high artesian pressures have been observed historically and these conditions are being studied and analyzed. Such study and analysis work is expected to continue into 2026 and is not expected to be completed prior to Closing.

* The scheduled work completion timelines for all entries above marked with the asterisk (*) are subject to change due to numerous factors which include the procurement of equipment and materials, contractor performance, and the provisions of any contracts applicable to such work.

Schedule 5.6(c)

Project Assets (Condemnation)

None.

Schedule 5.6(d)

Project Assets (Sufficiency)

1. The Warning Siren Equipment listed on Schedule 1.1(b).

2. The Applications, Circuits, Security – Control Boards, POTS lines, and Radio Equipment listed on Schedule 2.1(b).

3. The US Forest Service Special Use Permit for the Loud Project and the Five Channels Project, issued November 22, 1913, listed in Part I of Schedule 5.14(a), is hereby incorporated by reference.

4. The MDNR Natural River Zoning Permit No. A2023018U for the Alcona Project, issued March 8, 2024, listed in Part I of Schedule 5.13(c), is hereby incorporated by reference.

Schedule 5.6(e)

Project Assets (FERC Licenses)

1. In September 2022, the Michigan Department of Natural Resources ("DNR") petitioned FERC to find Seller in violation of Article 401 of the Croton Project's Operating License. This was related to a single instance at the Croton Project where the utility failed to adequately operate the Croton Project in re-regulation mode, resulting in downstream river fluctuations, which DNR claimed threatened aquatic resources. FERC subsequently issued Seller an Article 401 violation via a December 2022 letter. Neither DNR nor FERC identified any actual damages to aquatic resources.

2. In May 2021, a series of related oil releases occurred at the Mio Project, resulting in violation notices from FERC and U.S. Environmental Protection Agency ("EPA"). Both EPA and FERC requested follow-up information from Seller, which was submitted to the agencies in October 2021 and February 2022, respectively. Neither EPA nor FERC have provided notice of resolution of this matter to Seller.

3. Item #1 on Schedule 3.1(e) is hereby incorporated by reference.

4. Seller has noted in annual reports required by Article 404 for the Weber Project that a discrepancy exists between a Seller-owned dissolved oxygen monitor installed at the end of the pier between the spillway and tailrace and third-party contractor-owned dissolved oxygen monitors located at the pier and farther downstream of the Weber Project. Seller has reported to FERC that the dissolved oxygen monitor infrequently monitors low dissolved oxygen levels, but the corresponding third-party contractor's monitored dissolved oxygen levels are above the minimum required levels. Seller has consistently reported these discrepancies, has made changes to monitoring equipment, and FERC has not issued a finding of non-compliance.

5. In January 2025, Seller's staff at the Hodenpyl Project noticed a reduction in turbine oil, which led to a discovery that 2024 project work resulted in intermittent oil loss to the river. EGLE followed up in April 2025 with a request for additional information. Seller responded to EGLE with an April 7, 2025, submittal. FERC was also notified of this release, which was submitted in January, 2025. EGLE has not provided notice of resolution of this matter to Seller.

6. In connection with a recent communication with FERC staff regarding a routine filing for a revision to Exhibit A to the FERC License for the Croton Project, Seller was asked about certain "exceptions" to the project boundary for the Croton Project which FERC staff indicated appeared in its internal database. As a result of this inquiry, Seller has reviewed the current project boundary map for the Croton Project (Exhibit G-1 to the FERC License) and discovered two small parcels of land (totaling approximately 1 acre) which appear to be within the current project boundary but which Seller does not own. Seller has since reviewed prior documentation, including prior project boundary maps, filed with or issued by FERC with respect to the Croton Project, but has been unable to conclusively determine the significance of FERC's decision to approve an "exception" from the project boundary by FERC. The current project boundary map (Exhibit G-1 to the FERC License) affirmatively identifies these two parcels as "exceptions" without further explanation. According to the license order for the Croton Project (FERC Project No. P-2468), "The project consists of: (1) All lands, to the extent of the Licensee's interest in those lands show by exhibit G." Consumers Power Co., 68 FERC ¶ 61,079 at p. 61,422 (1994) (emphasis added). Because Seller

identified these parcels as “exceptions” in its Exhibit G-1 filed with FERC, and because FERC approved the Exhibit G-1 map with this disclosure, Seller does not believe that it is out of compliance with this provision of the license order, but is making this disclosure because of the uncertainty surrounding the treatment of these two parcels in the project boundary map.

Schedule 5.7(a)

Real Property Interests

1. Schedule 3.1(e) is hereby incorporated by reference.

2. Master Leaseback Agreement (Cash-Flowing) dated as of December 5, 2023, between Seller and Vertical Bridge Towers, IV, LLC, a Delaware limited liability company.

3. Master Leaseback Agreement (Non-Cash-Flowing) dated as of December 5, 2023, between Seller and Vertical Bridge Towers, IV, LLC, a Delaware limited liability company.

4. The Excluded Shoreline Licenses.

Schedule 5.9(g)

Seller Tax Returns (Proceedings)

None.

REDACTED

Schedule 5.9(l)

Seller Tax Returns (Jurisdictions)

1. Michigan – Corporate Income Tax
2. Michigan – Sales and Use Tax
3. Curtis Township – Real and Personal Property Tax
4. Valley Township – Real and Personal Property Tax
5. City of Allegan – Real and Personal Property Tax
6. Oscoda Township – Real and Personal Property Tax
7. Big Prairie Township – Real and Personal Property Tax
8. Croton Township – Real and Personal Property Tax
9. Mecosta Township – Real and Personal Property Tax
10. Aetna Township – Real and Personal Property Tax
11. Marilla Township – Real and Personal Property Tax
12. Springville Township – Real and Personal Property Tax
13. Village of Mesick – Real and Personal Property Tax
14. Wexford Township – Real and Personal Property Tax
15. Big Creek Township – Real and Personal Property Tax
16. Dickson Township – Real and Personal Property Tax
17. Norman Township – Real and Personal Property Tax
18. Lyons Township – Real and Personal Property Tax
19. Portland Township – Real and Personal Property Tax

Schedule 5.10(a)

Material Contracts

1. Joint Funding Agreement by and between the Michigan Department of Environment, Great Lakes, and Energy and Seller, with a start date of October 1, 2024, and end date of September 30, 2025, as may be replaced from time to time in accordance with Section 7.12(o) of the Agreement.

2. Collection Agreement dated as of April 1, 2005, by and between the U.S. Department of Agriculture, Forest Service, Huron-Manistee National Forests and Seller, as amended from time to time.

3. Contract for Five Channels Unit 1 Wicket Gate and Loud Unit 2 Wicket Gate dated as of March 17, 2025, by and between Seller and Hydro Tech USA Inc., a Delaware corporation.

4. Contract for Labor and Material dated as of January 15, 2025, by and between Seller and C&M Asset Holdings LLC dba Champagne & Marx Excavating, a Michigan corporation, as amended by that certain Contract Change Order No. 1, dated as of March 21, 2025.

5. Contract for Alcona Hydro Trash Rack Cleaning System dated as of November 1, 2024, by and between Seller and ATLAS-SSI, INC., a Mississippi corporation, as amended from time to time.

6. Contract for Technical and Consulting Services dated as of July 10, 2024, by and between Seller and Basinger Engineering Incorporated dba Schnabel Engineering of Michigan, Inc., a North Carolina professional corporation.

7. Contract for Hydro Electric Plant Governor Upgrade Project dated as of January 10, 2018, by and between Seller and American Governor Company, a Delaware corporation, as amended by the Contract Change Order No. 01 dated February 1, 2019, as further amended by the Contract Change Order No. 02 dated May 28, 2019, as further amended by the Contract Change Order No. 03 dated August 30, 2019, as further amended by the Contract Change Order No. 04 dated as of April 23, 2020, as further amended by the Contract Change Order No. 05 dated August 21, 2020, as further amended by the Contract Change Order No. 06 dated November 23, 2020, as further amended by the Contract Change Order No. 07 dated December 21, 2020, as further amended by the Contract Change Order No. 08 dated June 25, 2021, as further amended by the Contract Change Order No. 09 dated October 11, 2021, as further amended by the Contract Change Order No. 10 dated November 29, 2021, as further amended by the Contract Change Order No. 11 dated April 28, 2022, as further amended by the Contract Change Order No. 12 dated April 30, 2023, and as further amended by the Contract Change Order No. 13 dated February 5, 2024.

8. Contract for Cooke Mid Slope Remediation and Headgate Replacement dated as of February 16, 2024, by and between Seller and Fisher Contracting Company, a Michigan corporation, as amended by the Contract Change Order No. 1 dated as of March 28, 2024.

9. Contract for Labor and Material dated as of February 7, 2024, by and between Seller and Hydro Tech USA Inc., a Delaware corporation, as amended by the Contract Change Order No. 01 dated as of January 24, 2025.

10. General Contract for Technical and Consulting Services dated as of February 20, 2020, by and between Seller and Basinger Engineering Incorporated d/b/a Schnabel Engineering of Michigan, Inc., a North Carolina professional corporation, as amended by the Contract Change Order No. 1

dated as of April 30, 2021, as further amended by the Contract Change Order No. 2 dated as of July 6, 2022, and as further amended by the Contract Change Order No. 3 dated as of November 22, 2022.

11. Major Equipment Purchase Contract dated as of November 30, 2021, by and between Seller and Lemke Industrial Machine LLC ("Lemke"), as amended by the Change Order No. 1 dated as of May 1, 2023, and as further amended by the Change Order No. 2 dated as of July 1, 2024 (the "Lemke Master Contract").

12. Contract for Hardy Dam Rehabilitation dated as of January 3, 2025, by and between Seller and Kokosing Industrial, Inc., an Ohio corporation.*

13. The following purchaser orders entered into pursuant to the General Contract for Technical and Consulting Services dated as of February 2, 1998, by and between Seller and Barr Engineering Company, a Minnesota corporation, as amended by the Contract Change Order No. 01 dated as of November 6, 1998, as further amended by the Contract Change Order No. 2 dated as of February 3, 1999, as further amended by the Contract Change Order No. 3 dated as of October 5, 2000, as further amended by the Contract Change Order No. 4 dated as of January 22, 2003, as further amended by the Contract Change Order No. 5 dated as of December 7, 2003, as further amended by the Contract Change Order No. 6 dated as of January 20, 2006, as further amended by the Contract Change Order No. 7 dated as of January 7, 2008, as further amended by the Contract Change Order No. 8 dated as of June 16, 2008, as further amended by the Contract Change Order No. 9 dated as of February 26, 2009, as further amended by the Contract Change Order No. 10 dated as of February 1, 2010, as further amended by the Contract Change Order No. 11 dated as of February 22, 2011, as further amended by the Contract Change Order No. 12 dated as of January 23, 2012, as further amended by the Contract Change Order No. 13 dated as of April 2, 2014, as further amended by the Contract Change Order No. 14 dated as of February 18, 2025, and as further amended by the Contract Change Order No. 15 dated as of March 22, 2016:

    a. Purchase Order No. 4400125301, dated as of March 28, 2024.
    b. Purchase Order No. 4400125455, dated as of April 4, 2024.
    c. Purchase Order No. 4400125804, dated as of April 18, 2024.
    d. Purchase Order No. 4400128834, dated as of September 11, 2024.
    e. Purchase Order No. 4400131729, dated as of January 17, 2025.
    f. Purchase Order No. 4400132852, dated as of March 5, 2025.
    g. Purchase Order No. 4400132857, dated as of March 5, 2025.
    h. Purchase Order No. 4400135011, dated as of June 3, 2025.

14. The following purchase orders entered into pursuant to the General Contract for Labor and Material dated as of April 10, 2015, by and between Seller and Fisher Contracting Company, a Michigan corporation, as amended from time to time:

    a. Purchase Order No. 4400124826, dated as of March 7, 2024.
    b. Purchase Order No. 4400126848, dated as of June 5, 2024.
    c. Purchase Order No. 4400134453, dated as of May 8, 2025.

15. Large Generator Interconnection Agreement (LGIA) by and between Seller, Michigan Electric Transmission Company, LLC, a Michigan limited liability company, and Midcontinent

Independent System Operator, Inc. (formerly Midwest Independent System Transmission Operator, Inc.), a Delaware non-profit, non-stock corporation, effective July 25, 2008.

16. The Leases.

17. The Shoreline Licenses.

18. The Flowage Easements.

19. The Calkins Bridge Project Easement Reservation.

20. Memorandum of Understanding executed as of March 9, 1995, by and between Seller and the Michigan Department of Natural Resources.

21. Memorandum of Understanding executed as of September 21, 1994, by and between Seller and the Michigan Department of Natural Resources.

22. Offer of Settlement dated as of July 25, 2005, by and among Seller, the United States Department of Agriculture Forest Service, the United States Department of Interior Fish and Wildlife Services, the Michigan Department of Natural Resources, and the Michigan Hydro Relicensing Coalition pursuant to the Federal Energy Regulatory Commission.

23. Offer of Settlement dated as of November 23, 1992, by and among Seller, the United States Department of Agriculture Forest Services, the United States Department of Interior Fish and Wildlife Services, the Michigan Department of Natural Resources, the United States Department of Interior National Park Service, and the Michigan State Historic Preservation Officer pursuant to the Federal Energy Regulatory Commission.

24. Contract for Tippy Dam Unit 1 Bearing Replacements dated as of June 9, 2022, by and between Seller and Hydro Tech Inc., a Canadian corporation, as amended by the Contract Change Order No. 01 dated as of January 18, 2024, amended by the Contract Change Order No. 02 dated February 1, 2024, and as amended by Contract Change Order No. 3, dated January 22, 2025 (the "Tippy Bearing Replacement Contract").

*The Material Contract marked with an asterisk (*) above is a Material Contract as of the Effective Date, but shall not be a Material Contract or Project Contract as of the Closing Date if the associated Seller Required Consent set forth on Schedule 5.5 is not obtained prior to Closing.

Schedule 5.10(b)

Material Contracts (Enforceability)

None.

Schedule 5.10(c)

Material Contracts (Breaches or Defaults)

Part I.

In connection with the Lemke Master Contract, Seller submitted a warranty claim for the Hodenpyl Project spill gate on April 22, 2025, to Lemke regarding Hodenpyl Spillgate Hoist Equipment (the "Lemke Warranty Claim").

Part II.

None.

Schedule 5.10(d)

Material Contracts (Payments)

Seller is currently withholding approximately $500,000 from payment to Lemke in connection with the Lemke Warranty Claim.

Schedule 5.10(f)

Material Contracts (Third Party Rights)

None.

Schedule 5.11

Broker Fees

1. The fees, rates and expenses owing pursuant to the Contract for Technical and Consulting Services dated as of September 20, 2023, by and between Seller and Clear Energy Brokerage & Consulting, LLC, as amended.

Schedule 5.12(a)

Legal Compliance (Applicable Laws)

1. **Hodenpyl Project**: Hodenpyl elevator permit – 5-year inspection not completed in a timely manner which has been resolved.

2. **Croton Project**: Croton elevator permit – 5-year inspection not completed in a timely manner which has been resolved.

3. Schedule 5.3(a) is hereby incorporated by reference.

REDACTED

Schedule 5.12(b)

Legal Compliance (Notices)

1. Item #1 on Schedule 3.1(e) is hereby incorporated by reference.

2. Schedule 5.12(a) is hereby incorporated by reference.

Schedule 5.13(a)

Environmental Matters (Environmental Laws)

1. Item #3 on Schedule 5.3(a) is hereby incorporated by reference.

2. During a survey of building materials at the Hardy Project, it was determined that some areas of the structure may have used caulking that contains Polychlorinated Biphenyls ("PCBs"). Handling of impacted materials will be subject to the EPA's Toxic Substances Control Act ("TSCA").

3. Recognized Environmental Conditions ("RECs") identified in the preliminary Phase I environmental site assessments identified below on the Fee Simple Real Property:

   a. **Alcona Project** (Preliminary Phase I Environmental Site Assessment, Alcona Dam Hydroelectric Facility & FERC Boundary Parcels, dated April 26, 2024, prepared by Triterra for Seller) - The potential for contamination at the Alcona Project from historical or current operations (Sections 5.1 and 6.3.7). Parcel Tax IDs #030-010-100-005-00 and 030-003-200-010-00 (Fee Parcels). A campground maintenance area was observed in the northeast portion of Alcona Park Campground. Triterra observed several abandoned vehicles, outdoor storage of equipment, and dumped debris on the site.

   b. **Cooke** (Preliminary Phase I Environmental Site Assessment, Cooke Dam Hydroelectric Facility & FERC Boundary Parcels, dated April 26, 2024, prepared by Triterra for Seller) - The potential for environmental impact at the Cooke Project from historical or current operations (Section 5.1). Triterra observed evidence of outdoor equipment storage and potential dumped debris on the 4410 M-65 site (Parcel Tax ID #060-026-100-001-00) (Fee parcel) on historical aerial imagery since at least 1998. Triterra was unable to view the current conditions due to access limitations during site reconnaissance.

   c. **Croton** (Preliminary Phase I Environmental Site Assessment, Croton Hydroelectric Dam and Additional Land Located within the FERC Boundaries, dated April 17, 2024, prepared by Grand Environmental for Seller):

      i. The historical presence of three 175-gallon creosote and one 500-gallon diesel/gasoline underground storage tanks ("USTs") that were previously utilized at the Croton Project and were reported to have been removed in 1989 and 1988, respectively with no documentation of site assessment sampling or analysis. The USTs are located on parcel number 62-20-18-200-016 a Fee Simple Real Property parcel.

      ii. The identification of two historically disturbed areas of land located in the northwest tip (parcel number 62-16-32-100-004) and southwest portions of the Croton Project (parcel number 62-20-18-200-016), which are non-fee and Fee Simple Real Property parcels, respectively.

   e. **Five Channels** (Preliminary Phase I Environmental Site Assessment, Five Channels Dam Hydroelectric Facility & FERC Boundary Parcels, dated April 26, 2024, prepared by Triterra for Seller) - The potential for environmental impact at the Five Channels Project from historical and current operations (Section 5.1). Seller's headquarters for the Five Channels Project (6051 M-65) (Fee Simple Real Property parcel) is located north of the Five Channel Project powerhouse. Various garages and maintenance buildings have been constructed and razed on the site since at least 1938

and the outdoor storage of materials/debris and equipment was observed in the western portion of the site in historical aerials. Maintenance operations are associated with the use and storage of various hazardous materials and vehicle maintenance and fueling. Additionally, one 1,000-gallon UST containing gasoline was installed in 1967 and removed in 1990. Triterra did not encounter records regarding the UST closure procedures, the condition of the UST during closure, or records of confirmation sampling performed during closure. The potential exists for an unknown or unreported gasoline release to occur. The location of the suspected contamination plume may fall within the critical distance to the subject parcel building(s) to create a potential vapor intrusion concern.

f. **Foote** (Preliminary Phase I Environmental Site Assessment, Alcona Dam Hydroelectric Facility & FERC Boundary Parcels, dated April 26, 2024, prepared by Triterra for Seller):

    i. The documented presence of contamination at the Foote Project from historical USTs (Section 4.3.4). Triterra reviewed an Initial Assessment Report ("IAR") for the site located at 1879 W. River Road in Oscoda, Michigan (Fee Simple Real Property parcel) (parcel ID: 062-034-400-002-00). According to the IAR, contamination exists within soil and groundwater on the subject parcel as a result of releases from historical USTs present on the subject parcel and the adjoining parcel.

    ii. The potential for contamination at the Foote Project from historical USTs (Section 4.2). Old Orchard Park – 833/881/883 E. River Road (Fee Simple Real Property parcel) - One 1,000-gallon UST containing gasoline was installed in 1989 and removed in 1995; and one 500-gallon UST containing an unknown substance was installed in 1986 and removed in 1987. These USTs were associated with the Orchard Park Store. Additionally, one 1,000-gallon UST of gasoline was removed in 1995 and was associated with the Old Orchard Park Maintenance building. Triterra did not encounter records regarding the UST closure procedures, condition of tank during closure, or records of confirmation sampling performed during closure.

h. **Hardy** (Preliminary Phase I Environmental Site Assessment, Hardy Hydroelectric Dam and Additional Land Located within the FERC Boundaries, dated April 12, 2024, prepared by Grand Environmental for Seller):

    i. The former use of a UST for the hydroelectric plant with no site assessment report on parcel 16-28-400-004 owned by Seller (Fee Simple Real Property parcel).

    ii. The potential presence of a historical landfill on or adjacent the Hardy Project near parcel 16-16-400-003 owned by Seller (Fee Simple Real Property parcel).

    iii. The presence of plugged dry holes and a plugged gas well within and near the FERC boundaries located on parcels 16-28-300-004, 16-16-400-002, 16-22-200-003, 54-09-031-001-000, 54-09-032-001-000, and 54-09-021-003-000, which are all owned by Seller (Fee Simple Real Property parcels).

k. **Hodenpyl** (Preliminary Phase I Environmental Site Assessment, Hodenpyl Hydroelectric Dam and Additional Land Located within the FERC Boundaries, dated April 4, 2024, prepared by Grand Environmental for Seller):

i. A 250-gallon tote and approximately 24 drums of unknown contents stored around a storage building at the Lions Club roadside park on parcel # 2312-11-2101, located on the south side of M-115 and owned by Seller.

ii. The presence of observed historical dumping at the Hodenpyl Project, including scrap metal and drums on parcel # 510902510001, a Seller owned parcel just west of the hydroelectric plant in Marilla Township, Manistee County.

m. **Tippy** (Preliminary Phase I Environmental Site Assessment, Tippy Hydroelectric Dam and Additional Land Located within the FERC Boundaries, dated April 12, 2024, prepared by Grand Environmental for Seller):

i. The presence of a UST that was closed in place with no documented site assessment sampling completed on parcel # 51-05-031-100-01, addressed as 1325 Tippy Dam Road, and owned by Seller.

ii. The presence of a former UST that was removed in 1989 with no documented site assessment sampling and the potential presence of ASTs and gas pumps at Camp Mana Pine addressed as 991-998 Emmons Road, Wellston, MI on parcels 51-10-005-225-00 and/or 51-10-006-100-00, owned by Seller.

iii. Historical AST cradle of unknown purpose and former substation as well as historical storage yard immediately south of the powerhouse building on parcel # 51-05-031-100-01, addressed as 1325 Tippy Dam Road and owned by Seller.

iv. The presence of observed historical dumping on parcel # 51-05-031-100-01, addressed as 1325 Tippy Dam Road, and owned by Seller since at least 1938, including scrap metal, concrete, wood and empty drums south of the operations buildings.

4. Electronic mail from EPA to Seller on March 14, 2025, titled "Re: Notice of Federal Interest - Oil Discharge to the Foote Dam Pond and Au Sable River at 1775 E River Road, Oscoda Twp, MI 48750" regarding the discharge or substantial threat of discharge of oil, as detailed therein.

5. Item #5 on Schedule 5.6(e) is hereby incorporated by reference.

6. Seller has obtained lead and asbestos testing results at the following Projects. The handling of lead and asbestos containing material may be subject to local, state and/or federal regulations.

a. Lead - Alcona, Allegan, Cooke, Croton, Five Channels, Foote, Hardy, Hodenpyl, Loud, Mio, Rogers, Tippy, Webber.

b. Asbestos – Allegan, Five Channels, Foote, Hodenpyl, Rogers, Webber.

Schedule 5.13(b)

Environmental Compliance (Notices)

1. Item #3 on Schedule 5.3(a) is hereby incorporated by reference.

2. Item #5 on Schedule 5.6(e) is hereby incorporated by reference.

3. Item #4 on Schedule 5.13(a) is hereby incorporated by reference.

REDACTED

Schedule 5.13(c)

Environmental Compliance (Material Environmental Permits)

Part I.

Dam	Permit Type	Permit No.	Issue Date	Effective Date	Expiration	Status	Permit Use	Transfer Notes
Alcona	WRD - NPDES: NPDES Certificate of Coverage under General Permit (COC)- Noncontact Cooling Water	COC MIG250377	7/31/2024	9/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2
Alcona*	WRD - Resources: Resources Minor Project	WRP042796 v1.0	9/23/2024	9/23/2024	9/23/2029	In Effect	Project Specific	Refer to Transfer Note 1
Alcona*	WRD - Resources: Resources Individual Permit	WRP040249 v1.0	2/26/2024	2/26/2024	2/26/2029	In Effect	Project Specific	Refer to Transfer Note 1
Alcona**	MDNR Natural River Zoning Permit	A2023018U	3/8/2024	3/8/2024	3/8/2026	In Effect	Project Specific	Refer to Transfer Note 4
Alcona*	WRD - Resources: Resources General Permit	WRP033102 v1.0	5/2/2022	5/2/2022	5/2/2027	In Effect	Project Specific	Refer to Transfer Note 1
Alcona*	WRD - Resources: Resources General Permit	WRP044791 v1.0	4/22/2025	4/22/2025	4/22/2030	In Effect	Project Specific	Refer to Transfer Note 1
Alcona*	WRD - Resources: Resources General Permit	WRP046277 v1.0	8/28/2025	8/28/2025	8/28/2030	In Effect	Project Specific	Refer to Transfer Note 1
Foote	WRD - NPDES: NPDES Certificate of Coverage under General Permit (COC)- Noncontact Cooling Water	COC MIG250389	9/3/2024	10/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2
Foote*	WRD - Resources: Resources Minor Project	WRP041459 v1.0	6/24/2024	6/24/2024	6/24/2029	In Effect	Project Specific	Refer to Transfer Note 1
Foote*	WRD - Resources: Resources Minor Project	WRP043723	12/19/2024	12/19/2024	12/19/2029	In Effect	Project Specific	Refer to Transfer Note 1
Foote*	WRD - Resources: Resources Minor Project	WRP02138 v1.0	9/21/2020	9/21/2020	9/21/2025	In Effect	Project Specific	Refer to Transfer Note 1
Hardy	WRD - NPDES: NPDES Certificate of Coverage under General Permit	COC MIG250336	8/13/2024	9/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2

REDACTED

	(COC)-Noncontact Cooling Water							
Hardy*	WRD - Resources: Resources Individual Permit	WRP035989 v1.0	11/22/2023	11/22/2023	11/22/2028	In Effect	Project Specific	Refer to Transfer Note 1
Hardy*	WRD - Resources: Resources General Permit	WRP029471 v1.0	8/11/2021	8/11/2021	8/11/2026	In Effect	Project Specific	Refer to Transfer Note 1
Hardy*	WRD - Resources: Resources Individual Permit	WRP026083 v1.0	12/10/2020	12/10/2020	12/10/2025	In Effect	Project Specific	Refer to Transfer Note 1
Hardy*	WRD - Resources: Resources General Permit	WRP023380 v1.0	7/9/2020	7/9/2020	7/9/2025	In Effect	Project Specific	Refer to Transfer Note 1
Hardy*	WRD - Part 327 Water Withdrawal Permit	2022-007	2/27/2023	2/27/2023	No Expiration	In Effect	Project Specific	Refer to Transfer Note 1
Hodenpyl	WRD - NPDES: NPDES Certificate of Coverage under General Permit (COC)-Noncontact Cooling Water	COC MIG250178	9/3/2024	10/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2
Hodenpyl*	WRD - Resources: Resources Individual Permit	WRP043954 v1.0	1/23/2025	1/23/2025	1/23/2030	In Effect	Project Specific	Refer to Transfer Note 1
Hodenpyl*	SESC	25-954	7/22/2025	7/22/2025	7/22/2026	In Effect	Project Specific	Refer to Transfer Note 3
Hodenpyl*	SESC	PSE25-0019	7/17/2025	7/17/2025	7/17/2026	In Effect	Project Specific	Refer to Transfer Note 3
Loud*	WRD - Resources: Resources Minor Project	WRP040543 v1.0	4/3/2024	4/3/2024	4/3/2029	In Effect	Project Specific	Refer to Transfer Note 1
Loud*	WRD - Resources: Resources Individual Permit	WRP028919 v1.1	5/21/2021	9/13/2021	5/21/2026	In Effect	Project Specific	Refer to Transfer Note 1
Mio	WRD - NPDES: NPDES Certificate of Coverage under General Permit (COC)-Noncontact Cooling Water	COC MIG250381	8/6/2024	9/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2
Mio*	WRD - Resources: Resources Individual Permit	WRP032238 v1.1	3/21/2022	9/19/2022	3/21/2027	In Effect	Project Specific	Refer to Transfer Note 1

Mio*	WRD - Resources: Resources Individual Permit	WRP030595 v1.0	9/7/2021	9/7/2021	9/7/2026	In Effect	Project Specific	Refer to Transfer Note 1
Tippy	WRD - NPDES: NPDES Certificate of Coverage under General Permit (COC)- Noncontact Cooling Water	COC MIG250177	8/13/2024	9/1/2024	4/1/2028	In Effect	Operations	Refer to Transfer Note 2
Tippy*	WRD - Resources: Resources Minor Project	WRP029815 v1.0	7/14/2021	7/14/2021	7/14/2026	In Effect	Project Specific	Refer to Transfer Note 1
Webber*	WRD - Resources: Resources Individual Permit	WRP037113 v. 1.0	6/1/2023	6/1/2023	6/1/2028	In Effect	Project Specific	Refer to Transfer Note 1
Webber*	WRD - Resources: Resources Minor Project	WRP032808 v.1	3/22/2022	3/22/2022	3/22/2027	In Effect	Project Specific	Refer to Transfer Note 1
Rogers*	SESC	PSEP23-0180	11/15/2023	11/15/2023	11/14/2025	In Effect	Project Specific	Refer to Transfer Note 3

* The Material Environmental Permits marked with an asterisk (*) above are Material Environmental Permits as of the Effective Date, but shall not be Material Environmental Permits or Project Permits as of the Closing Date if the associated Seller Required Consent set forth on Schedule 5.5 is not obtained prior to Closing.

** The Material Environmental Permit marked with two asterisks (**) above is an Excluded Permit.

Part II.

Transfer Note 1. This Permit may be transferred to another person upon written approval of EGLE. The permittee must submit a written request to EGLE to transfer the Permit to the new owner. The new owner must also submit a written request to EGLE to accept transfer. The new owner must agree, in writing, to accept all conditions of the Permit. A single letter signed by both Parties that includes all the above information may be provided to EGLE. EGLE will review the request and, if approved, will provide written notification to the new owner. For avoidance of doubt, if the activities authorized under this Permit are not anticipated to be complete as of the Closing Date, the Parties shall jointly apply to transfer such permit to Purchaser in accordance with this Part II of this Schedule 5.13(c).

Transfer Note 2. In the event of any change in ownership or control of facilities from which the authorized discharge emanates, the following requirements apply: Not less than thirty (30) days prior to the actual transfer of ownership or control – for non-CAFOs, or within thirty (30) days of the actual transfer of ownership or control – for CAFOs, the permittee shall submit to the Department via MiEnviro Portal (https://mienviro.michigan.gov) a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment. If the new permittee is proposing changes in

operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

Transfer Note 3. *324.9112(3) Except as provided in subsection (4), if property subject to a permit under this part is transferred, both of the following are transferred with the property:*

(a) The permit, including the permit obligations and conditions.

(b) Responsibility for any violations of the permit that exist on the date the property is transferred.

(4) If property is subject to a permit under this part and a parcel of the property, but not the entire property, is transferred, both of the following are transferred with the parcel:

(a) The permit obligations and conditions with respect to that parcel, but not the permit itself.

(b) Responsibility for any violations of the permit with respect to that parcel that exist on the date the parcel is transferred.

(5) If property subject to a permit under this part is proposed to be transferred, the transferor shall notify the transferee of the permit in writing on a form developed by the department and provided by the county enforcing agency or municipal enforcing agency. The notice shall inform the transferee of the requirements of subsection (2) and, as applicable, subsection (3) or (4). The notice shall include a copy of the permit. The transferor and transferee shall sign the notice, and the transferor shall submit the signed notice to the county enforcing agency or municipal enforcing agency before the property is transferred.

(6) A county enforcing agency or municipal enforcing agency may charge a fee for the transfer of a permit under subsection (3) or (4). The fee shall not exceed the administrative costs of transferring the permit. Fees collected under this subsection shall only be used for the enforcement and administration of this part by the enforcing agency. (See MCL Section 324.9112)

Transfer Note 4. Michigan Administrative Code R281.54(c). A zoning permit is valid for 2 years and is not transferable. All structures shall be completed within 2 years from the date of issuance of the zoning permit.

Schedule 5.14(a)

Permits (Material Permits)

Part I.

Dam	Permit Type	Permit No.	Issue Date	Effective Date	Expiration	Status	Permit Use	Transfer Notes
Croton	Annual Elevator Certificate of Operation*	004858	N/A	N/A	11/26/2025	In Effect	Operations (non-essential)	Transfer Note 1
Hodenpyl	Annual Elevator Certificate of Operation*	005262	N/A	N/A	5/16/2025	In Effect	Operations (non-essential)	Transfer Note 1
Loud and Five Channels	US Forest Service – Special Use Permit**	Permit for communications line between Loud and Five Channels. Fiber communications line currently located in this area.	11/22/1913	N/A	N/A	In Effect	Operations	N/A

* The Material Permits marked with an asterisk (*) above are Material Permits as of the Effective Date, but shall not be Material Permits or Project Permits as of the Closing Date if the associated Seller Required Consent set forth on Schedule 5.5 is not obtained prior to Closing.

** The Material Permit marked with two asterisks (**) above is an Excluded Permit.

Part II.

Transfer Note 1. Permit is transferrable. It is unclear if Seller, Purchaser or jointly Seller and Purchaser apply for transfer.

Part III.

Items #1 and #2 on Schedule 5.12(a) are hereby incorporated by reference.

Schedule 5.16(a)

Employment Matters (Non-Union Employees)

Part I.*

Employee Full Name	Job Name
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]

Employee Full Name	Job Name
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]
	[redacted]

***** The disclosures regarding the Non-Union Employees in this Part I of Schedule 5.16(a) are marked with an asterisk (*) because the initial date of employment, status, employing entity, salary or wage level, bonus, commission or other remuneration other than salary paid, accrued vacation and/or paid time off, and any bookkeeping account balances for reimbursable benefits has been Made Available to Purchaser and will be updated at Closing.

Part II.

None.

Schedule 5.16(b)

Employment Matters (Union Employees)

Part I. *

Employee Full Name	Job Name
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
[redacted]	[redacted]
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Employee Full Name	Job Name
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	[redacted]
	[redacted]

***** The disclosures regarding the Union Employees in this Part I of Schedule 5.16(b) are marked with an asterisk (*) because the initial date of employment, status, employing entity, salary or wage level, bonus, commission or other remuneration other than salary paid, accrued vacation and/or paid time off, and any bookkeeping account balances for reimbursable benefits has been Made Available to Purchaser and will be updated at Closing.

Part II.

1. Generation Transfer Settlement Agreement between Seller and Union dated as of March 7, 2022.
2. AuSable River (5 Channels) On Call Agreement dated as of March 9, 2022.
3. Hydro Settlement Agreement between Seller and Union dated as of June 10, 2022.
4. Hydroelectric Generating Plants Webber/Calkins Bridge Coverage Agreement between Seller and Union dated as of September 19, 2018.
5. 2016 Addendum to Attachment 24 of the 2010 Memorandum of Agreement dated as of October 18, 2016.
6. Temporary Union Instructor Agreement between Seller and Union dated as of February 7, 2012.
7. Memorandum of Experimental 4-10 Schedule delivered by Seller to Union dated as of May 12, 1998.
8. Hydro Control Monitoring System Agreement between Seller and Union dated as of February 1, 2016.
9. Vacation Donation Agreement (OM&C/CCC) between Seller and Union dated as of June 1, 2020
10. The Union has filed an arbitration demand related to a difference of interpretation of a new term in the 2025 – 2030 OM&C Working Agreement. Seller and Union agreed in negotiations that

employees covered by the 2025 – 2030 OM&C Working Agreement and who work a four (4) day, ten (10) hour shift, would no longer automatically be assigned a five (5) day, eight (8) hour shift in work weeks within which there is a paid holiday. Seller's interpretation is that the vacation and paid time off provisions still apply so that when employees covered by the 2025 – 2030 OM&C Working Agreement is on a four (4) day, ten (10) hour shift takes paid time off for the full week in which there is a paid holiday, the schedule is reverted to a five (5) day, eight (8) hour schedule. Seller applied its interpretation for the 4th of July holiday and the Union has demanded the instant grievance. The Union's expected interpretation is that when employees covered by the 2025 - 2030 OM&C Working Agreement work a four (4) day, ten (10) hour shift they will never be reverted to a five (5) day, eight (8) hour shift in a week that includes a paid holiday, regardless of their use of vacation or other paid time off.

Schedule 5.17(a)

Employee Benefit Matters (Plans)

[redacted]

REDACTED

[redacted]

REDACTED

Schedule 5.17(a)(iv)

Employee Benefit Plans (Title IV)

[redacted]

REDACTED

Schedule 5.17(a)(v)

Employee Benefit Plans (COBRA)

[redacted]

REDACTED

Schedule 5.17(a)(ix)

Employee Benefit Matters (Severance)

[redacted]

Schedule 5.19

Support Obligations

1. Permit WRP035989 v.1 includes wetland and stream mitigation conditions which includes, among others, an obligation for the permittee to provide a surety bond or letter of credit to EGLE in in a form equivalent to the financial assurance models on EGLE's website at 'www.michigan.gov/wetlands' in an amount equal to $2,075,000 (the cost opinion for the selected stream mitigation projects as detailed in the report by Muskegon River Watershed Assembly dated October 13, 2022) to ensure that the stream mitigation is constructed, the conservation easement is recorded, monitoring is completed, and corrective actions are performed as required to comply with the mitigation requirements and conditions of this permit. The permittee shall also provide a surety bond or letter of credit to the EGLE in a form identical to the financial assurance models on EGLE's website at 'www.michigan.gov/wetlands' in the amount of $432,000 to ensure that the replacement wetland is constructed, the conservation easement is recorded, monitoring is completed, and corrective actions are performed as required to comply with the restoration requirements and conditions of this permit. Prior to the transfer of this permit to another person, the new person must obtain and provide a financial instrument acceptable to EGLE in the name of the new person and in the amount required by this permit.

2. Permit WRP032238 v1.1 includes a primary condition to mitigate the loss of wetlands by acquiring wetland mitigation banking credits from a bank site in the Au Sable River Watershed or Ecoregion VII.2.2. The permittee (Seller) has provided a surety bond in the amount of $50,400 to ensure that the mitigation banking credits will be purchased once available. The permittee shall submit documentation of credit acquisition to EGLE prior to the release of the financial assurance document.

REDACTED

Schedule 6.5

Purchaser Third Party Consents

None.

Schedule 7.6(a)

Excluded Employees

None.

Schedule 7.7(d)

Operation and Maintenance of Project Assets

1. Seller discovered that property owners on and adjacent to the Croton Project impoundment have installed seawalls, docks and other shoreline structures without Seller's authorization. Seller engaged in negotiations with Croton Township stakeholders on this issue and, in 2022, developed a mutually acceptable form of easement agreement to ensure Seller retained appropriate authorization over structures installed into the impoundment.

   Seller initially identified 264 properties that have affected structures on and adjacent to the Croton Project impoundment. Through March 31, 2025: (i) 235 property owners have signed easement agreements, (ii) five (5) properties were ultimately determined to not have impacted structures, and (iii) twelve (12) properties have indicated that they will sign easement agreement but have not yet returned the necessary documents. Furthermore, there are twelve (12) properties that have refused to sign any document related to Seller's authority over their structures.

   Seller is in the process of pursuing quiet title actions for the twenty-four (24) properties that have not signed the easement agreement. While pursuing such actions, Seller will continue working with the property owners to obtain sign off on the necessary authorizations.

   During the Interim Period, for the remaining for the twenty-four (24) properties that have structures on and adjacent to the Croton Project's impoundment have not signed the easement agreement, Seller shall be permitted to continue with the actions described herein to obtain easement agreements or a court order quieting title without the consent of Purchaser.

   In addition to the easement agreement actions, as described above, Seller is actively working to enter "multi-owner" dock licenses for docks located on the Croton Project impoundment. These licenses are intended to capture property owners that do not own property adjacent to the Croton Project impoundment and who have located docks on road ends, platted parks, and outlots. These docks are designated as "multi-owner" docks because they are shared with multiple other individuals. Seller is targeting a resolution of these multi-owner docks in 2025.

2. In connection with the Lemke Master Contract, Seller and Lemke are in the process of entering Contract Change Order No. 3 which is expected to result in a reduction to the contract price in the amount of approximately $622,000. Seller expects that Contract Change Order No. 3 will be executed during the Interim Period.

   In connection with the execution of Contract Change Order No. 3, as set forth above, Seller and Lemke are also working to resolve the warranty claim, as set forth in Part I of Schedule 5.10(c).

3. The following WRD – Resources Permits for the Loud Project and Cooke Project are in the process of being obtained by Seller and is expected to be obtained in the Interim Period. The Company is also in the process of obtaining the following MDNR Natural River Zoning Permit for the Alcona Project.

   The pending WRD – Resources Permit for the Cooke Project pertains to a project to replace the right tailrace retaining wall. This work includes installing a temporary cofferdam, dewatering the work area,

and removing and rebuilding the approximately 135 lineal feet existing wall in kind. This permit is expected to be submitted to EGLE in August 2025 and work on this project is expected to start in late spring/early summer 2026.

The pending WRD – Resources Permit for the Loud Project pertains to remediation work for the core wall along the left embankment of the Loud Project impoundment, approximately 1,500 feet long. A portion of the Loud Project left tailrace retaining wall will also be repaired and replaced. This permit is expected to be submitted to EGLE in September 2025 and work is expected in 2026.

The pending MDNR Natural River Zoning Permit for the Alcona Project pertains to adding one (1) cubic yard of riprap along six (6) feet of the west wingwall of the Alcona Project. This permitting effort may result in an amendment to the existing MDNR Natural River Zoning Permit for the Alcona Project, Permit No. A2023018U, or result in a standalone permit. An application is expected to be submitted to the MDNR in 2025 and work is expected to also begin in 2025.

Dam	Permit Type	Permit No.	Issue Date	Effective Date	Expiration	Status	Permit Use	Transfer Notes
Cooke	WRD - Resources: Resources Individual Permit	Pending	Pending	Pending	Pending	Pending	Project Specific	Refer to Transfer Note 1 in Schedule 5.13(c)
Loud	WRD - Resources: Pending	Pending	Pending	Pending	Pending	Pending	Project Specific	Refer to Transfer Note 1 in Schedule 5.13(c)
Alcona	MDNR Natural River Zoning Permit	Pending	Pending	Pending	Pending	Pending	Project Specific	Refer to Transfer Note 4 in Schedule 5.13(c)

4. As set forth on Schedule 5.17(a)(ix), Seller expects to offer all Non-Union Employees a retention incentive agreement which would provide such Non-Union Employees 150% of base annual pay as of Closing.

   Seller expects to offer all Union Employees an individual retention and transfer forfeiture agreement which would provide such Union Employees: (i) a payment of 5% of annual base pay for executing the agreement within thirty (30) days of offer; (ii) 95% of annual base pay for forfeiting transfer rights under the CBA at the time of Closing; and (iii) 50% of annual base pay to forfeiture placement rights under the CBA at the time of Closing.

5. In connection with the Tippy Bearing Replacement Contract, Seller and Hydro Tech Inc. are in the process of entering Contract Change Order No. 4 for a bearing replacement project at Tippy Project unit 1 which adds $630,355.07 to the contract price to bring the total contract price of this contract to $3,241,067.50.

6. The following WRD - Resources: Resources Individual Permit for the Hardy Project is subject to revision due to changes Seller needs to make for stream mitigation. Seller is working with the issuing

Governmental Authority to obtain the revised Permit. At this time, it is not known if such revision will impact the term of the referenced Permit.

Dam	Permit Type	Permit No.	Issue Date	Effective Date	Expiration	Status	Permit Use	Transfer Notes
Hardy	WRD - Resources: Resources Individual Permit	WRP035989 v1.0	11/22/2023	11/22/2023	11/22/2028	In Effect	Project Specific	Refer to Transfer Note 1 in Schedule 5.13(c)

REDACTED

Schedule 8.4(b)(i)(C)

Property Taxes (Prorations)

PURCHASE AND SALE AGREEMENT
CONSUMERS ENERGY COMPANY
TBD
PROPERTY TAXES - SECTION 8.4(b)

Closing Date:	8/1/2025	
Days Charged to Seller	213	58.4%
Days Charged to Purchaser	152	41.6%

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	030-003-200-005-00	Curtis Township	301 - Real	7/1/2025	5,910	1%	184	30.7455	Alcona
Consumers Energy Company	030-003-200-010-00	Curtis Township	301 - Real	7/1/2025	37,604	1%	1,168	30.7455	Alcona
Consumers Energy Company	030-003-300-005-00	Curtis Township	301 - Real	7/1/2025	30,245	1%	939	30.7455	Alcona
Consumers Energy Company	030-004-100-005-00	Curtis Township	301 - Real	7/1/2025	41,698	1%	1,295	30.7455	Alcona
Consumers Energy Company	030-004-100-010-00	Curtis Township	301 - Real	7/1/2025	3,660	1%	114	30.7455	Alcona
Consumers Energy Company	030-009-100-005-00	Curtis Township	301 - Real	7/1/2025	30,245	1%	939	30.7455	Alcona
Consumers Energy Company	030-009-100-010-00	Curtis Township	301 - Real	7/1/2025	3,660	1%	114	30.7455	Alcona
Consumers Energy Company	030-010-100-005-00	Curtis Township	301 - Real	7/1/2025	85,254	1%	2,647	30.7455	Alcona
Consumers Energy Company	030-010-100-010-00	Curtis Township	301 - Real	7/1/2025	22,881	1%	711	30.7455	Alcona

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	030-011-100-010-00	Curtis Township	301 - Real	7/1/2025	32,493	1%	1,009	30.7455	Alcona
Consumers Energy Company	030-011-100-015-00	Curtis Township	301 - Real	7/1/2025	2,636	1%	82	30.7455	Alcona
Consumers Energy Company	030-014-100-010-00	Curtis Township	301 - Real	7/1/2025	2,855,475	1%	88,671	30.7455	Alcona
Consumers Energy Company	030-015-100-005-00	Curtis Township	301 - Real	7/1/2025	20,019	1%	622	30.7455	Alcona
Consumers Energy Company	030-016-100-001-00	Curtis Township	301 - Real	7/1/2025	20,019	1%	622	30.7455	Alcona
Consumers Energy Company	030-016-100-005-00	Curtis Township	301 - Real	7/1/2025	20,077	1%	623	30.7455	Alcona
Consumers Energy Company	032-900-003-020-00	Curtis Township	551 - Utility Personal	7/1/2025	199,542	1%	6,196	30.7455	Alcona
Consumers Energy Company	0301-018-012-00	Valley Township	301 - Real	7/1/2025	13,847	1%	156	11.1619	Allegan
Consumers Energy Company	0301-019-003-00	Valley Township	301 - Real	7/1/2025	2,169	1%	24	11.1619	Allegan
Consumers Energy Company	0301-020-007-00	Valley Township	301 - Real	7/1/2025	1,820	1%	21	11.1619	Allegan
Consumers Energy Company	0301-020-042-00	Valley Township	301 - Real	7/1/2025	722	1%	8	11.1619	Allegan
Consumers Energy Company	0301-021-037-00	Valley Township	301 - Real	7/1/2025	100	1%	1	11.1619	Allegan
Consumers Energy Company	0301-022-012-00	Valley Township	301 - Real	7/1/2025	1,870	1%	21	11.1619	Allegan
Consumers Energy Company	0301-022-013-00	Valley Township	301 - Real	7/1/2025	1,173	1%	13	11.1619	Allegan
Consumers Energy Company	03-22-010-012-00	Valley Township	301 - Real	7/1/2025	359	1%	4	11.1619	Allegan
Consumers Energy Company	03-22-013-009-00	Valley Township	301 - Real	7/1/2025	3,530	1%	40	11.1619	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	03-22-013-010-00	Valley Township	301 - Real	7/1/2025	3,415	1%	38	11.1619	Allegan
Consumers Energy Company	03-22-013-011-00	Valley Township	301 - Real	7/1/2025	3,415	1%	38	11.1619	Allegan
Consumers Energy Company	03-22-013-020-00	Valley Township	301 - Real	7/1/2025	3,941	1%	44	11.1619	Allegan
Consumers Energy Company	03-22-013-026-00	Valley Township	301 - Real	7/1/2025	454	1%	5	11.1619	Allegan
Consumers Energy Company	03-22-013-027-00	Valley Township	301 - Real	7/1/2025	796	1%	9	11.1619	Allegan
Consumers Energy Company	03-22-014-035-00	Valley Township	301 - Real	7/1/2025	2,154	1%	24	11.1619	Allegan
Consumers Energy Company	03-22-014-036-00	Valley Township	301 - Real	7/1/2025	7,830	1%	88	11.1619	Allegan
Consumers Energy Company	03-22-014-037-00	Valley Township	301 - Real	7/1/2025	1,752	1%	20	11.1619	Allegan
Consumers Energy Company	03-22-014-038-00	Valley Township	301 - Real	7/1/2025	7,020	1%	79	11.1619	Allegan
Consumers Energy Company	03-22-014-039-00	Valley Township	301 - Real	7/1/2025	4,183	1%	47	11.1619	Allegan
Consumers Energy Company	03-22-015-007-00	Valley Township	301 - Real	7/1/2025	3,984	1%	45	11.1619	Allegan
Consumers Energy Company	03-22-015-009-00	Valley Township	301 - Real	7/1/2025	897,298	1%	10,116	11.1619	Allegan
Consumers Energy Company	03-22-015-010-00	Valley Township	301 - Real	7/1/2025	1,365	1%	15	11.1619	Allegan
Consumers Energy Company	03-22-015-011-00	Valley Township	301 - Real	7/1/2025	23,004	1%	259	11.1619	Allegan
Consumers Energy Company	03-22-015-012-00	Valley Township	301 - Real	7/1/2025	10,931	1%	123	11.1619	Allegan
Consumers Energy Company	03-22-016-003-00	Valley Township	301 - Real	7/1/2025	1,638	1%	18	11.1619	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	03-22-022-001-00	Valley Township	301 - Real	7/1/2025	7,697	1%	87	11.1619	Allegan
Consumers Energy Company	03-22-023-001-00	Valley Township	301 - Real	7/1/2025	2,163	1%	24	11.1619	Allegan
Consumers Energy Company	03-22-023-020-00	Valley Township	301 - Real	7/1/2025	2,163	1%	24	11.1619	Allegan
Consumers Energy Company	03-22-024-001-00	Valley Township	301 - Real	7/1/2025	454	1%	5	11.1619	Allegan
Consumers Energy Company	03-22-024-003-00	Valley Township	301 - Real	7/1/2025	910	1%	10	11.1619	Allegan
Consumers Energy Company	03-22-024-009-00	Valley Township	301 - Real	7/1/2025	7,575	1%	85	11.1619	Allegan
Consumers Energy Company	03-51-100-009-00	City of Allegan	301 - Real	7/1/2025	753	1%	31	40.79175	Allegan
Consumers Energy Company	03-51-100-010-00	City of Allegan	301 - Real	7/1/2025	500	1%	21	40.79175	Allegan
Consumers Energy Company	03-51-100-011-00	City of Allegan	301 - Real	7/1/2025	200	1%	8	40.79175	Allegan
Consumers Energy Company	03-51-105-262-00	City of Allegan	301 - Real	7/1/2025	800	1%	33	40.79175	Allegan
Consumers Energy Company	03-51-105-263-00	City of Allegan	301 - Real	7/1/2025	200	1%	8	40.79175	Allegan
Consumers Energy Company	03-51-105-265-00	City of Allegan	301 - Real	7/1/2025	300	1%	12	40.79175	Allegan
Consumers Energy Company	03-51-105-269-00	City of Allegan	301 - Real	7/1/2025	100	1%	4	40.79175	Allegan
Consumers Energy Company	03-51-200-001-00	City of Allegan	301 - Real	7/1/2025	339	1%	14	40.79175	Allegan
Consumers Energy Company	03-51-200-002-00	City of Allegan	301 - Real	7/1/2025	300	1%	12	40.79175	Allegan
Consumers Energy Company	03-51-200-018-00	City of Allegan	301 - Real	7/1/2025	100	1%	4	40.79175	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	03-51-200-019-00	City of Allegan	301 - Real	7/1/2025	200	1%	8	40.79175	Allegan
Consumers Energy Company	03-51-200-067-00	City of Allegan	301 - Real	7/1/2025	367	1%	15	40.79175	Allegan
Consumers Energy Company	03-51-240-024-00	City of Allegan	301 - Real	7/1/2025	367	1%	15	40.79175	Allegan
Consumers Energy Company	51-920-013-00	City of Allegan	551 - Utility Personal	7/1/2025	264,944	1%	10,916	40.79175	Allegan
Consumers Energy Company	060-026-100-001-00	Oscoda Township	301 - Real	7/1/2025	34,035	1%	1,094	31.8220	Cooke
Consumers Energy Company	061-015-400-001-00	Oscoda Township	301 - Real	7/1/2025	2,688,945	1%	86,423	31.8220	Cooke
Consumers Energy Company	061-020-100-002-00	Oscoda Township	301 - Real	7/1/2025	5,047	1%	162	31.8220	Cooke
Consumers Energy Company	061-021-100-001-00	Oscoda Township	301 - Real	7/1/2025	2,651	1%	85	31.8220	Cooke
Consumers Energy Company	061-021-100-001-25	Oscoda Township	301 - Real	7/1/2025	3,089	1%	99	31.8220	Cooke
Consumers Energy Company	061-029-100-001-00	Oscoda Township	301 - Real	7/1/2025	12,762	1%	410	31.8220	Cooke
Consumers Energy Company	061-029-100-003-00	Oscoda Township	301 - Real	7/1/2025	7,064	1%	227	31.8220	Cooke
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	7/1/2025	243,164	1%	7,815	31.8220	Cooke
Consumers Energy Company	16-32-100-004	Big Prairie Township	301 - Real	7/1/2025	75,279	1%	2,548	33.5153	Croton
Consumers Energy Company	20-04-100-010	Croton Township	301 - Real	7/1/2025	149	1%	5	33.5153	Croton
Consumers Energy Company	20-05-400-003	Croton Township	301 - Real	7/1/2025	1,464	1%	50	33.5153	Croton
Consumers Energy Company	20-07-451-001	Croton Township	301 - Real	7/1/2025	5,728	1%	194	33.5153	Croton

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	20-07-460-001	Croton Township	301 - Real	7/1/2025	2,940	1%	100	33.5153	Croton
Consumers Energy Company	20-07-461-001	Croton Township	301 - Real	7/1/2025	1,056	1%	36	33.5153	Croton
Consumers Energy Company	20-07-461-002	Croton Township	301 - Real	7/1/2025	1,626	1%	55	33.5153	Croton
Consumers Energy Company	20-07-470-001	Croton Township	301 - Real	7/1/2025	2,445	1%	83	33.5153	Croton
Consumers Energy Company	20-07-470-003	Croton Township	301 - Real	7/1/2025	820	1%	28	33.5153	Croton
Consumers Energy Company	20-07-471-001	Croton Township	301 - Real	7/1/2025	378	1%	13	33.5153	Croton
Consumers Energy Company	20-07-471-002	Croton Township	301 - Real	7/1/2025	820	1%	28	33.5153	Croton
Consumers Energy Company	20-07-471-003	Croton Township	301 - Real	7/1/2025	807	1%	27	33.5153	Croton
Consumers Energy Company	20-08-200-001	Croton Township	301 - Real	7/1/2025	34,123	1%	1,155	33.5153	Croton
Consumers Energy Company	20-08-400-001	Croton Township	301 - Real	7/1/2025	7,316	1%	248	33.5153	Croton
Consumers Energy Company	20-09-300-004	Croton Township	301 - Real	7/1/2025	1,626	1%	55	33.5153	Croton
Consumers Energy Company	20-15-100-002	Croton Township	301 - Real	7/1/2025	149	1%	5	33.5153	Croton
Consumers Energy Company	20-17-100-008	Croton Township	301 - Real	7/1/2025	3,985	1%	135	33.5153	Croton
Consumers Energy Company	20-17-100-009	Croton Township	301 - Real	7/1/2025	25,783	1%	873	33.5153	Croton
Consumers Energy Company	20-17-101-001	Croton Township	301 - Real	7/1/2025	9,058	1%	307	33.5153	Croton
Consumers Energy Company	20-17-101-007	Croton Township	301 - Real	7/1/2025	1,291	1%	44	33.5153	Croton

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	20-17-200-003	Croton Township	301 - Real	7/1/2025	3,300	1%	112	33.5153	Croton
Consumers Energy Company	20-18-200-016	Croton Township	301 - Real	7/1/2025	3,822,000	1%	129,376	33.5153	Croton
Consumers Energy Company	50-17-000-500	Croton Township	551 - Utility Personal	7/1/2025	110,003	1%	3,724	33.5153	Croton
Consumers Energy Company	060-022-100-003-00	Oscoda Township	301 - Real	7/1/2025	54,813	1%	1,762	31.8220	Five
Consumers Energy Company	060-023-300-001-00	Oscoda Township	301 - Real	7/1/2025	2,978,293	1%	95,723	31.8220	Five
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	7/1/2025	484,306	1%	15,566	31.8220	Five
Consumers Energy Company	062-019-300-001-00	Oscoda Township	301 - Real	7/1/2025	64,185	1%	2,063	31.8220	Foote
Consumers Energy Company	062-020-300-001-00	Oscoda Township	301 - Real	7/1/2025	64,928	1%	2,087	31.8220	Foote
Consumers Energy Company	062-020-300-001-50	Oscoda Township	Assessed W/062-028-100-002-00	7/1/2025	-	1%	-	31.8220	Foote
Consumers Energy Company	062-021-300-001-00	Oscoda Township	301 - Real	7/1/2025	12,762	1%	410	31.8220	Foote
Consumers Energy Company	062-027-100-002-00	Oscoda Township	301 - Real	7/1/2025	108,235	1%	3,479	31.8220	Foote
Consumers Energy Company	062-028-100-001-00	Oscoda Township	301 - Real	7/1/2025	170,332	1%	5,475	31.8220	Foote
Consumers Energy Company	062-028-100-002-00	Oscoda Township	301 - Real	7/1/2025	155,202	1%	4,988	31.8220	Foote
Consumers Energy Company	062-029-100-001-00	Oscoda Township	301 - Real	7/1/2025	58,678	1%	1,886	31.8220	Foote
Consumers Energy Company	062-029-100-001-50	Oscoda Township	Assessed W/062-028-100-002-00	7/1/2025	-	1%	-	31.8220	Foote

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	062-029-400-001-00	Oscoda Township	Assessed W/062-028-100-002-00	7/1/2025	-	1%	-	31.8220	Foote
Consumers Energy Company	062-030-200-001-00	Oscoda Township	301 - Real	7/1/2025	18,822	1%	605	31.8220	Foote
Consumers Energy Company	062-033-100-001-00	Oscoda Township	301 - Real	7/1/2025	44,338	1%	1,425	31.8220	Foote
Consumers Energy Company	062-033-100-003-00	Oscoda Township	Assessed W/062-028-100-002-00	7/1/2025	-	1%	-	31.8220	Foote
Consumers Energy Company	062-034-100-001-00	Oscoda Township	301 - Real	7/1/2025	134,860	1%	4,334	31.8220	Foote
Consumers Energy Company	062-034-400-002-00	Oscoda Township	301 - Real	7/1/2025	4,677	1%	150	31.8220	Foote
Consumers Energy Company	062-035-200-001-00	Oscoda Township	301 - Real	7/1/2025	43,615	1%	1,402	31.8220	Foote
Consumers Energy Company	062-035-200-002-00	Oscoda Township	301 - Real	7/1/2025	27,251	1%	876	31.8220	Foote
Consumers Energy Company	062-035-200-003-00	Oscoda Township	301 - Real	7/1/2025	3,439,485	1%	110,546	31.8220	Foote
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	7/1/2025	220,109	1%	7,074	31.8220	Foote
Consumers Energy Company	09009010000	Mecosta Township	301 - Real	7/1/2025	30,923	0%	366	11.8430	Hardy
Consumers Energy Company	09010031000	Mecosta Township	301 - Real	7/1/2025	105	0%	1	11.8430	Hardy
Consumers Energy Company	09015001000	Mecosta Township	301 - Real	7/1/2025	39,477	0%	468	11.8430	Hardy
Consumers Energy Company	09016001000	Mecosta Township	301 - Real	7/1/2025	62,903	0%	745	11.8430	Hardy
Consumers Energy Company	09020001000	Mecosta Township	301 - Real	7/1/2025	9,997	0%	118	11.8430	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	09020003000	Mecosta Township	301 - Real	7/1/2025	26,709	0%	316	11.8430	Hardy
Consumers Energy Company	09020004000	Mecosta Township	Leased to Mecosta Co Parks	7/1/2025	-	0%	-	11.8430	Hardy
Consumers Energy Company	09021003000	Mecosta Township	301 - Real	7/1/2025	33,688	0%	399	11.8430	Hardy
Consumers Energy Company	09021004000	Mecosta Township	301 - Real	7/1/2025	177	0%	2	11.8430	Hardy
Consumers Energy Company	09021006000	Mecosta Township	301 - Real	7/1/2025	6,178	0%	73	11.8430	Hardy
Consumers Energy Company	09022004000	Mecosta Township	301 - Real	7/1/2025	6,300	0%	75	11.8430	Hardy
Consumers Energy Company	09022007000	Mecosta Township	301 - Real	7/1/2025	177	0%	2	11.8430	Hardy
Consumers Energy Company	09028010000	Mecosta Township	301 - Real	7/1/2025	26,447	0%	313	11.8430	Hardy
Consumers Energy Company	09029003000	Mecosta Township	301 - Real	7/1/2025	12,627	0%	150	11.8430	Hardy
Consumers Energy Company	09029007000	Mecosta Township	301 - Real	7/1/2025	2,627	0%	31	11.8430	Hardy
Consumers Energy Company	09029010000	Mecosta Township	301 - Real	7/1/2025	177	0%	2	11.8430	Hardy
Consumers Energy Company	09029011000	Mecosta Township	301 - Real	7/1/2025	177	0%	2	11.8430	Hardy
Consumers Energy Company	09030016000	Mecosta Township	301 - Real	7/1/2025	177	0%	2	11.8430	Hardy
Consumers Energy Company	09031001000	Mecosta Township	301 - Real	7/1/2025	33,949	0%	402	11.8430	Hardy
Consumers Energy Company	09031002000	Mecosta Township	Leased to Mecosta Co Parks	7/1/2025	-	0%	-	11.8430	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	09031002500	Mecosta Township	301 - Real	7/1/2025	16,971	0%	201	11.8430	Hardy
Consumers Energy Company	09032001000	Mecosta Township	301 - Real	7/1/2025	32,898	0%	390	11.8430	Hardy
Consumers Energy Company	09032002000	Mecosta Township	Leased to Mecosta Co Parks	7/1/2025	-	0%	-	11.8430	Hardy
Consumers Energy Company	5413006003000	Aetna Township	301 - Real	7/1/2025	94,503	1%	1,130	11.8430	Hardy
Consumers Energy Company	5413018016000	Aetna Township	301 - Real	7/1/2025	25,037	1%	299	11.8430	Hardy
Consumers Energy Company	5413019005000	Aetna Township	301 - Real	7/1/2025	15,461	1%	185	11.8430	Hardy
Consumers Energy Company	16-01-200-002	Big Prairie Township	301 - Real	7/1/2025	38,002	1%	428	11.1521	Hardy
Consumers Energy Company	16-01-400-013	Big Prairie Township	301 - Real	7/1/2025	6,956	1%	78	11.1521	Hardy
Consumers Energy Company	16-11-400-002	Big Prairie Township	301 - Real	7/1/2025	35,221	1%	397	11.1521	Hardy
Consumers Energy Company	16-12-100-001	Big Prairie Township	301 - Real	7/1/2025	46,638	1%	525	11.1521	Hardy
Consumers Energy Company	16-12-200-003	Big Prairie Township	301 - Real	7/1/2025	144,505	1%	1,628	11.1521	Hardy
Consumers Energy Company	16-12-300-001	Big Prairie Township	301 - Real	7/1/2025	530	1%	6	11.1521	Hardy
Consumers Energy Company	16-13-100-001	Big Prairie Township	301 - Real	7/1/2025	45,116	1%	508	11.1521	Hardy
Consumers Energy Company	16-13-200-001	Big Prairie Township	301 - Real	7/1/2025	76,398	1%	861	11.1521	Hardy
Consumers Energy Company	16-14-300-001	Big Prairie Township	301 - Real	7/1/2025	46,784	1%	527	11.1521	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-14-400-001	Big Prairie Township	301 - Real	7/1/2025	55,777	1%	628	11.1521	Hardy
Consumers Energy Company	16-15-100-008	Big Prairie Township	301 - Real	7/1/2025	50,578	1%	570	11.1521	Hardy
Consumers Energy Company	16-15-200-001	Big Prairie Township	301 - Real	7/1/2025	15,404	1%	174	11.1521	Hardy
Consumers Energy Company	16-15-300-001	Big Prairie Township	301 - Real	7/1/2025	1,114	1%	13	11.1521	Hardy
Consumers Energy Company	16-15-400-001	Big Prairie Township	301 - Real	7/1/2025	2,024	1%	23	11.1521	Hardy
Consumers Energy Company	16-16-400-002	Big Prairie Township	301 - Real	7/1/2025	24,987	1%	281	11.1521	Hardy
Consumers Energy Company	16-21-200-002	Big Prairie Township	301 - Real	7/1/2025	939	1%	11	11.1521	Hardy
Consumers Energy Company	16-21-200-003	Big Prairie Township	301 - Real	7/1/2025	10,547	1%	119	11.1521	Hardy
Consumers Energy Company	16-21-400-001	Big Prairie Township	301 - Real	7/1/2025	2,245	1%	25	11.1521	Hardy
Consumers Energy Company	16-22-100-001	Big Prairie Township	301 - Real	7/1/2025	19,400	1%	219	11.1521	Hardy
Consumers Energy Company	16-22-200-003	Big Prairie Township	301 - Real	7/1/2025	19,410	1%	219	11.1521	Hardy
Consumers Energy Company	16-22-400-001	Big Prairie Township	301 - Real	7/1/2025	103,453	1%	1,165	11.1521	Hardy
Consumers Energy Company	16-23-100-001	Big Prairie Township	301 - Real	7/1/2025	4,885	1%	55	11.1521	Hardy
Consumers Energy Company	16-23-100-002	Big Prairie Township	301 - Real	7/1/2025	13,560	1%	153	11.1521	Hardy
Consumers Energy Company	16-23-200-001	Big Prairie Township	301 - Real	7/1/2025	1,491	1%	17	11.1521	Hardy
Consumers Energy Company	16-23-400-002	Big Prairie Township	301 - Real	7/1/2025	9,985	1%	112	11.1521	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-23-400-003	Big Prairie Township	301 - Real	7/1/2025	32,227	1%	363	11.1521	Hardy
Consumers Energy Company	16-24-100-001	Big Prairie Township	301 - Real	7/1/2025	232	1%	3	11.1521	Hardy
Consumers Energy Company	16-24-100-002	Big Prairie Township	301 - Real	7/1/2025	14,476	1%	163	11.1521	Hardy
Consumers Energy Company	16-24-200-002	Big Prairie Township	301 - Real	7/1/2025	42,802	1%	482	11.1521	Hardy
Consumers Energy Company	16-27-100-001	Big Prairie Township	301 - Real	7/1/2025	920	1%	10	11.1521	Hardy
Consumers Energy Company	16-27-100-003	Big Prairie Township	301 - Real	7/1/2025	5,263	1%	59	11.1521	Hardy
Consumers Energy Company	16-27-200-004	Big Prairie Township	301 - Real	7/1/2025	5,263	1%	59	11.1521	Hardy
Consumers Energy Company	16-27-300-002	Big Prairie Township	301 - Real	7/1/2025	16,392	1%	185	11.1521	Hardy
Consumers Energy Company	16-28-100-006	Big Prairie Township	301 - Real	7/1/2025	22,383	1%	252	11.1521	Hardy
Consumers Energy Company	16-28-200-002	Big Prairie Township	301 - Real	7/1/2025	1,114	1%	13	11.1521	Hardy
Consumers Energy Company	16-28-300-004	Big Prairie Township	301 - Real	7/1/2025	698,008	1%	23,628	33.5153	Hardy
Consumers Energy Company	16-28-400-004	Big Prairie Township	301 - Real	7/1/2025	9,975,630	1%	337,680	33.5153	Hardy
Consumers Energy Company	16-29-400-011	Big Prairie Township	301 - Real	7/1/2025	16,392	1%	555	33.5153	Hardy
Consumers Energy Company	16-33-200-002	Big Prairie Township	301 - Real	7/1/2025	14,134	1%	478	33.5153	Hardy
Consumers Energy Company	50-14-001-600	Big Prairie Township	551 - Utility Personal	7/1/2025	691,994	1%	23,424	33.5153	Hardy
Consumers Energy Company	51-09-024-375-01	Marilla Township	301 - Real	7/1/2025	181,583	1%	2,100	11.4505	Hodenpyl

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	51-09-025-100-01	Marilla Township	301 - Real	7/1/2025	26,100	1%	302	11.4505	Hodenpyl
Consumers Energy Company	2312-01-2101	Springville Township	301 - Real	7/1/2025	58,183	1%	740	12.5848	Hodenpyl
Consumers Energy Company	2312-02-1101	Springville Township	301 - Real	7/1/2025	98,677	1%	1,254	12.5848	Hodenpyl
Consumers Energy Company	2312-09-4401	Springville Township	301 - Real	7/1/2025	20,765	1%	264	12.5848	Hodenpyl
Consumers Energy Company	2312-10-1201	Springville Township	301 - Real	7/1/2025	136,178	1%	1,731	12.5848	Hodenpyl
Consumers Energy Company	2312-10-4201	Springville Township	301 - Real	7/1/2025	9,815	1%	125	12.5848	Hodenpyl
Consumers Energy Company	2312-11-2101	Springville Township	301 - Real	7/1/2025	89,456	1%	1,137	12.5848	Hodenpyl
Consumers Energy Company	2312-11-2401	Springville Township	301 - Real	7/1/2025	3,956	1%	50	12.5848	Hodenpyl
Consumers Energy Company	2312-15-1201	Springville Township	301 - Real	7/1/2025	58,006	1%	737	12.5848	Hodenpyl
Consumers Energy Company	2312-16-1101	Springville Township	301 - Real	7/1/2025	87,649	1%	1,114	12.5848	Hodenpyl
Consumers Energy Company	2312-16-3101	Springville Township	301 - Real	7/1/2025	13,360	1%	170	12.5848	Hodenpyl
Consumers Energy Company	2312-17-4301	Springville Township	301 - Real	7/1/2025	25,832	1%	328	12.5848	Hodenpyl
Consumers Energy Company	2312-17-4401	Springville Township	301 - Real	7/1/2025	12,094	1%	154	12.5848	Hodenpyl
Consumers Energy Company	2312-19-1301	Springville Township	301 - Real	7/1/2025	82,769	1%	1,052	12.5848	Hodenpyl
Consumers Energy Company	2312-19-2401	Springville Township	301 - Real	7/1/2025	30,443	1%	387	12.5848	Hodenpyl
Consumers Energy Company	2312-20-1101	Springville Township	301 - Real	7/1/2025	56,739	1%	721	12.5848	Hodenpyl

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	2312-20-1102	Springville Township	301 - Real	7/1/2025	8,477	1%	108	12.5848	Hodenpyl
Consumers Energy Company	2312-21-1201	Springville Township	301 - Real	7/1/2025	82,769	1%	1,052	12.5848	Hodenpyl
Consumers Energy Company	2312-21-2201	Springville Township	301 - Real	7/1/2025	3,238	1%	41	12.5848	Hodenpyl
Consumers Energy Company	2312-29-1101	Springville Township	301 - Real	7/1/2025	37,762	1%	480	12.5848	Hodenpyl
Consumers Energy Company	2312-30-1101	Springville Township	301 - Real	7/1/2025	3,716,790	1%	47,243	12.5848	Hodenpyl
Consumers Energy Company	2312M-111302	Springville Township	301 - Real	7/1/2025	1,960	1%	25	12.5848	Hodenpyl
Consumers Energy Company	2312M-111302	Village of Mesick	301 - Real	7/1/2025	1,960	1%	22	11.1012	Hodenpyl
Consumers Energy Company	2312M-114201	Springville Township	301 - Real	7/1/2025	23,029	1%	293	12.5848	Hodenpyl
Consumers Energy Company	2312M-114201	Village of Mesick	301 - Real	7/1/2025	23,029	1%	258	11.1012	Hodenpyl
Consumers Energy Company	2312Z-PER-02	Springville Township	551 - Utility Personal	7/1/2025	914,158	1%	11,620	12.5848	Hodenpyl
Consumers Energy Company	2412-36-2301	Wexford Township	301 - Real	7/1/2025	49,017	1%	623	12.5848	Hodenpyl
Consumers Energy Company	2412-36-3302	Wexford Township	301 - Real	7/1/2025	53,016	1%	674	12.5848	Hodenpyl
Consumers Energy Company	2412-VG-001	Wexford Township	301 - Real	7/1/2025	15,900	1%	202	12.5848	Hodenpyl
Consumers Energy Company	2412-VS-0103	Wexford Township	301 - Real	7/1/2025	43,182	1%	549	12.5848	Hodenpyl
Consumers Energy Company	060-019-200-001-00	Oscoda Township	301 - Real	7/1/2025	36,805	1%	1,183	31.8220	Loud
Consumers Energy Company	060-021-200-001-00	Oscoda Township	301 - Real	7/1/2025	2,083,305	1%	66,958	31.8220	Loud

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	7/1/2025	293,980	1%	9,449	31.8220	Loud
Consumers Energy Company	68-001-302-072-00	Big Creek Township	301 - Real	7/1/2025	5,045	1%	162	31.8697	Mio
Consumers Energy Company	68-001-303-010-00	Big Creek Township	301 - Real	7/1/2025	4,861	1%	156	31.8697	Mio
Consumers Energy Company	68-001-303-011-00	Big Creek Township	301 - Real	7/1/2025	26,191	1%	843	31.8697	Mio
Consumers Energy Company	68-001-303-032-00	Big Creek Township	301 - Real	7/1/2025	3,598	1%	116	31.8697	Mio
Consumers Energy Company	68-001-304-007-00	Big Creek Township	301 - Real	7/1/2025	525	1%	17	31.8697	Mio
Consumers Energy Company	68-001-304-018-50	Big Creek Township	301 - Real	7/1/2025	46,254	1%	1,489	31.8697	Mio
Consumers Energy Company	68-001-305-002-00	Big Creek Township	301 - Real	7/1/2025	17,368	1%	559	31.8697	Mio
Consumers Energy Company	68-001-310-001-00	Big Creek Township	301 - Real	7/1/2025	24,806	1%	798	31.8697	Mio
Consumers Energy Company	68-001-311-001-00	Big Creek Township	301 - Real	7/1/2025	59,089	1%	1,902	31.8697	Mio
Consumers Energy Company	68-001-312-019-00	Big Creek Township	301 - Real	7/1/2025	1,760,142	1%	56,656	31.8697	Mio
Consumers Energy Company	68-001-312-021-00	Big Creek Township	301 - Real	7/1/2025	41,559	1%	1,338	31.8697	Mio
Consumers Energy Company	68-001-312-022-00	Big Creek Township	301 - Real	7/1/2025	40,833	1%	1,314	31.8697	Mio
Consumers Energy Company	68-001-314-001-25	Big Creek Township	301 - Real	7/1/2025	9,451	1%	304	31.8697	Mio
Consumers Energy Company	68-006-307-001-00	Big Creek Township	301 - Real	7/1/2025	5,660	1%	182	31.8697	Mio
Consumers Energy Company	68-001-915-014-00	Big Creek Township	551 - Utility Personal	7/1/2025	1,241,015	1%	39,946	31.8697	Mio

	Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
	Consumers Energy Company	09001013000	Mecosta Township	301 - Real	7/1/2025	105	0%	1	11.8430	Rogers
	Consumers Energy Company	09002005000	Mecosta Township	301 - Real	7/1/2025	122	0%	1	11.8430	Rogers
	Consumers Energy Company	09010033000	Mecosta Township	301 - Real	7/1/2025	165	0%	2	11.8430	Rogers
	Consumers Energy Company	09011014000	Mecosta Township	301 - Real	7/1/2025	11,049	0%	131	11.8430	Rogers
	Consumers Energy Company	09011015000	Mecosta Township	301 - Real	7/1/2025	2,514,855	0%	29,783	11.8430	Rogers
	Consumers Energy Company	09014004000	Mecosta Township	301 - Real	7/1/2025	13,155	0%	156	11.8430	Rogers
	Consumers Energy Company	09014006000	Mecosta Township	301 - Real	7/1/2025	105	0%	1	11.8430	Rogers
	Consumers Energy Company	09014012000	Mecosta Township	301 - Real	7/1/2025	8,610	0%	102	11.8430	Rogers
	Consumers Energy Company	09057017000	Mecosta Township	301 - Real	7/1/2025	105	0%	1	11.8430	Rogers
	Consumers Energy Company	09998030000	Mecosta Township	551 - Utility Personal	7/1/2025	220,306	0%	2,609	11.8430	Rogers
1	Consumers Energy Company	51-05-031-100-01	Dickson Township	301 - Real	7/1/2025	5,189,730	1%	60,019	11.4505	Tippy
2	Consumers Energy Company	51-05-031-225-01	Dickson Township	301 - Real	7/1/2025	52,285	1%	605	11.4505	Tippy
3	Consumers Energy Company	51-05-136-100-01	Dickson Township	301 - Real	7/1/2025	19,396	1%	224	11.4505	Tippy
4	Consumers Energy Company	51-05-136-400-00	Dickson Township	301 - Real	7/1/2025	4,158	1%	48	11.4505	Tippy
5	Consumers Energy Company	51-05-900-026-00	Dickson Township	551 - Utility Personal	7/1/2025	806,413	1%	9,326	11.4505	Tippy
6	Consumers Energy Company	51-10-005-225-00	Norman Township	301 - Real	7/1/2025	166	1%	2	11.4505	Tippy

Seller		Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	7	51-10-005-325-00	Norman Township	301 - Real	7/1/2025	1,082	1%	13	11.4505	Tippy
Consumers Energy Company	8	51-10-006-100-00	Norman Township	301 - Real	7/1/2025	110	1%	1	11.4505	Tippy
Consumers Energy Company	9	51-10-008-100-01	Norman Township	301 - Real	7/1/2025	22,529	1%	261	11.4505	Tippy
Consumers Energy Company	10	51-10-016-300-00	Norman Township	301 - Real	7/1/2025	710	1%	8	11.4505	Tippy
Consumers Energy Company	1	34-080-080-000-015-00	Lyons Township	301 - Real	7/1/2025	1,136	1%	12	10.5537	Webber
Consumers Energy Company	2	34-080-080-000-025-00	Lyons Township	301 - Real	7/1/2025	2,941	1%	31	10.5537	Webber
Consumers Energy Company	3	34-080-080-000-030-00	Lyons Township	301 - Real	7/1/2025	5,236	1%	56	10.5537	Webber
Consumers Energy Company	4	34-080-080-000-035-00	Lyons Township	301 - Real	7/1/2025	3,759	1%	40	10.5537	Webber
Consumers Energy Company	5	34-080-080-000-040-00	Lyons Township	301 - Real	7/1/2025	9,012	1%	96	10.5537	Webber
Consumers Energy Company	6	34-080-080-000-050-00	Lyons Township	301 - Real	7/1/2025	478	1%	5	10.5537	Webber
Consumers Energy Company	7	34-080-080-000-055-00	Lyons Township	301 - Real	7/1/2025	646,800	1%	6,894	10.5537	Webber
Consumers Energy Company	8	34-080-080-000-055-01	Lyons Township	301 - Real	7/1/2025	6,096	1%	65	10.5537	Webber
Consumers Energy Company	9	34-080-080-000-055-02	Lyons Township	301 - Real	7/1/2025	2,774	1%	30	10.5537	Webber
Consumers Energy Company	10	34-080-080-000-055-03	Lyons Township	301 - Real	7/1/2025	2,774	1%	30	10.5537	Webber
Consumers Energy Company	11	34-080-900-000-045-00	Lyons Township	551 - Utility Personal	7/1/2025	10,956	1%	117	10.5537	Webber
Consumers Energy Company	12	34-140-040-000-010-00	Portland Township	301 - Real	7/1/2025	127	1%	1	10.5537	Webber

Seller		Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	13	34-140-040-000-020-00	Portland Township	301 - Real	7/1/2025	17,750	1%	189	10.5537	Webber
Consumers Energy Company	14	34-140-040-000-025-00	Portland Township	301 - Real	7/1/2025	127	1%	1	10.5537	Webber
Consumers Energy Company	15	34-140-040-000-030-00	Portland Township	301 - Real	7/1/2025	9,453	1%	101	10.5537	Webber
Consumers Energy Company	16	34-140-040-000-045-00	Portland Township	301 - Real	7/1/2025	1,883	1%	20	10.5537	Webber
Consumers Energy Company	17	34-140-040-000-050-00	Portland Township	301 - Real	7/1/2025	262	1%	3	10.5537	Webber
Consumers Energy Company	18	34-140-040-000-055-00	Portland Township	301 - Real	7/1/2025	1,750	1%	19	10.5537	Webber
Consumers Energy Company	19	34-140-040-000-060-00	Portland Township	301 - Real	7/1/2025	11,202	1%	119	10.5537	Webber
Consumers Energy Company	20	34-140-040-000-065-00	Portland Township	301 - Real	7/1/2025	11,202	1%	119	10.5537	Webber
Consumers Energy Company	21	34-140-040-000-090-00	Portland Township	301 - Real	7/1/2025	1,178	1%	13	10.5537	Webber
						Total7/1/2026PropertyTaxes		1,395,846		
Consumers Energy Company		030-003-200-005-00	Curtis Township	301- Real	12/1/2025	5,910	1%	50	8.3905	Alcona
Consumers Energy Company		030-003-200-010-00	Curtis Township	301- Real	12/1/2025	37,604	1%	319	8.3905	Alcona
Consumers Energy Company		030-003-300-005-00	Curtis Township	301- Real	12/1/2025	30,245	1%	256	8.3905	Alcona
Consumers Energy Company		030-004-100-005-00	Curtis Township	301- Real	12/1/2025	41,698	1%	353	8.3905	Alcona
Consumers Energy Company		030-004-100-010-00	Curtis Township	301- Real	12/1/2025	3,660	1%	31	8.3905	Alcona

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	030-009-100-005-00	Curtis Township	301- Real	12/1/2025	30,245	1%	256	8.3905	Alcona
Consumers Energy Company	030-009-100-010-00	Curtis Township	301- Real	12/1/2025	3,660	1%	31	8.3905	Alcona
Consumers Energy Company	030-010-100-005-00	Curtis Township	301- Real	12/1/2025	85,254	1%	722	8.3905	Alcona
Consumers Energy Company	030-010-100-010-00	Curtis Township	301- Real	12/1/2025	22,881	1%	194	8.3905	Alcona
Consumers Energy Company	030-011-100-010-00	Curtis Township	301- Real	12/1/2025	32,493	1%	275	8.3905	Alcona
Consumers Energy Company	030-011-100-015-00	Curtis Township	301- Real	12/1/2025	2,636	1%	22	8.3905	Alcona
Consumers Energy Company	030-014-100-010-00	Curtis Township	301- Real	12/1/2025	2,855,475	1%	24,198	8.3905	Alcona
Consumers Energy Company	030-015-100-005-00	Curtis Township	301- Real	12/1/2025	20,019	1%	170	8.3905	Alcona
Consumers Energy Company	030-016-100-001-00	Curtis Township	301- Real	12/1/2025	20,077	1%	170	8.3905	Alcona
Consumers Energy Company	030-016-100-005-00	Curtis Township	301- Real	12/1/2025	20,019	1%	170	8.3905	Alcona
Consumers Energy Company	032-900-003-020-00	Curtis Township	551 - Utility Personal	12/1/2025	199,542	1%	1,691	8.3905	Alcona
Consumers Energy Company	0301-018-012-00	Valley Township	301 - Real	12/1/2025	13,847	1%	554	39.60011	Allegan
Consumers Energy Company	0301-019-003-00	Valley Township	301 - Real	12/1/2025	2,169	1%	87	39.60011	Allegan
Consumers Energy Company	0301-020-007-00	Valley Township	301 - Real	12/1/2025	1,820	1%	73	39.60011	Allegan
Consumers Energy Company	0301-020-042-00	Valley Township	301 - Real	12/1/2025	722	1%	29	39.60011	Allegan
Consumers Energy Company	0301-021-037-00	Valley Township	301 - Real	12/1/2025	100	1%	4	39.60011	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	0301-022-012-00	Valley Township	301 - Real	12/1/2025	1,870	1%	75	39.60011	Allegan
Consumers Energy Company	0301-022-013-00	Valley Township	301 - Real	12/1/2025	1,173	1%	47	39.60011	Allegan
Consumers Energy Company	03-22-010-012-00	Valley Township	301 - Real	12/1/2025	359	1%	14	39.81320	Allegan
Consumers Energy Company	03-22-013-009-00	Valley Township	301 - Real	12/1/2025	3,530	1%	142	39.81320	Allegan
Consumers Energy Company	03-22-013-010-00	Valley Township	301 - Real	12/1/2025	3,415	1%	137	39.81320	Allegan
Consumers Energy Company	03-22-013-011-00	Valley Township	301 - Real	12/1/2025	3,415	1%	137	39.81320	Allegan
Consumers Energy Company	03-22-013-020-00	Valley Township	301 - Real	12/1/2025	3,941	1%	158	39.81320	Allegan
Consumers Energy Company	03-22-013-026-00	Valley Township	301 - Real	12/1/2025	454	1%	18	39.81320	Allegan
Consumers Energy Company	03-22-013-027-00	Valley Township	301 - Real	12/1/2025	796	1%	32	39.81320	Allegan
Consumers Energy Company	03-22-014-035-00	Valley Township	301 - Real	12/1/2025	2,154	1%	87	39.81320	Allegan
Consumers Energy Company	03-22-014-036-00	Valley Township	301 - Real	12/1/2025	7,830	1%	315	39.81320	Allegan
Consumers Energy Company	03-22-014-037-00	Valley Township	301 - Real	12/1/2025	1,752	1%	70	39.81320	Allegan
Consumers Energy Company	03-22-014-038-00	Valley Township	301 - Real	12/1/2025	7,020	1%	282	39.81320	Allegan
Consumers Energy Company	03-22-014-039-00	Valley Township	301 - Real	12/1/2025	4,183	1%	168	39.81320	Allegan
Consumers Energy Company	03-22-015-007-00	Valley Township	301 - Real	12/1/2025	3,984	1%	160	39.81320	Allegan
Consumers Energy Company	03-22-015-009-00	Valley Township	301 - Real	12/1/2025	897,298	1%	36,082	39.81320	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	03-22-015-010-00	Valley Township	301 - Real	12/1/2025	1,365	1%	55	39.81320	Allegan
Consumers Energy Company	03-22-015-011-00	Valley Township	301 - Real	12/1/2025	23,004	1%	925	39.81320	Allegan
Consumers Energy Company	03-22-015-012-00	Valley Township	301 - Real	12/1/2025	10,931	1%	440	39.81320	Allegan
Consumers Energy Company	03-22-016-003-00	Valley Township	301 - Real	12/1/2025	1,638	1%	66	39.81320	Allegan
Consumers Energy Company	03-22-022-001-00	Valley Township	301 - Real	12/1/2025	7,697	1%	310	39.81320	Allegan
Consumers Energy Company	03-22-023-001-00	Valley Township	301 - Real	12/1/2025	2,163	1%	87	39.81320	Allegan
Consumers Energy Company	03-22-023-020-00	Valley Township	301 - Real	12/1/2025	2,163	1%	87	39.81320	Allegan
Consumers Energy Company	03-22-024-001-00	Valley Township	301 - Real	12/1/2025	454	1%	18	39.81320	Allegan
Consumers Energy Company	03-22-024-003-00	Valley Township	301 - Real	12/1/2025	910	1%	37	39.81320	Allegan
Consumers Energy Company	03-22-024-009-00	Valley Township	301 - Real	12/1/2025	7,575	1%	305	39.81320	Allegan
Consumers Energy Company	03-51-100-009-00	City of Allegan	301 - Real	12/1/2025	753	1%	16	21.63875	Allegan
Consumers Energy Company	03-51-100-010-00	City of Allegan	301 - Real	12/1/2025	500	1%	11	21.63875	Allegan
Consumers Energy Company	03-51-100-011-00	City of Allegan	301 - Real	12/1/2025	200	1%	4	21.63875	Allegan
Consumers Energy Company	03-51-105-262-00	City of Allegan	301 - Real	12/1/2025	800	1%	17	21.63875	Allegan
Consumers Energy Company	03-51-105-263-00	City of Allegan	301 - Real	12/1/2025	200	1%	4	21.63875	Allegan
Consumers Energy Company	03-51-105-265-00	City of Allegan	301 - Real	12/1/2025	300	1%	7	21.63875	Allegan

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	03-51-105-269-00	City of Allegan	301 - Real	12/1/2025	100	1%	2	21.63875	Allegan
Consumers Energy Company	03-51-200-001-00	City of Allegan	301 - Real	12/1/2025	339	1%	7	21.63875	Allegan
Consumers Energy Company	03-51-200-002-00	City of Allegan	301 - Real	12/1/2025	300	1%	7	21.63875	Allegan
Consumers Energy Company	03-51-200-018-00	City of Allegan	301 - Real	12/1/2025	100	1%	2	21.63875	Allegan
Consumers Energy Company	03-51-200-019-00	City of Allegan	301 - Real	12/1/2025	200	1%	4	21.63875	Allegan
Consumers Energy Company	03-51-200-067-00	City of Allegan	301 - Real	12/1/2025	367	1%	8	21.63875	Allegan
Consumers Energy Company	03-51-240-024-00	City of Allegan	301 - Real	12/1/2025	367	1%	8	21.63875	Allegan
Consumers Energy Company	51-920-013-00	City of Allegan	551 - Utility Personal	12/1/2025	264,944	1%	5,790	21.63875	Allegan
Consumers Energy Company	060-026-100-001-00	Oscoda Township	301 - Real	12/1/2025	34,035	1%	468	13.6197	Cooke
Consumers Energy Company	061-015-400-001-00	Oscoda Township	301 - Real	12/1/2025	2,688,945	1%	36,989	13.6197	Cooke
Consumers Energy Company	061-020-100-002-00	Oscoda Township	301 - Real	12/1/2025	5,047	1%	69	13.6197	Cooke
Consumers Energy Company	061-021-100-001-00	Oscoda Township	301 - Real	12/1/2025	2,651	1%	36	13.6197	Cooke
Consumers Energy Company	061-021-100-001-25	Oscoda Township	301 - Real	12/1/2025	3,089	1%	42	13.6197	Cooke
Consumers Energy Company	061-029-100-001-00	Oscoda Township	301 - Real	12/1/2025	12,762	1%	176	13.6197	Cooke
Consumers Energy Company	061-029-100-003-00	Oscoda Township	301 - Real	12/1/2025	7,064	1%	97	13.6197	Cooke
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	12/1/2025	243,164	1%	3,345	13.6197	Cooke

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-32-100-004	Big Prairie Township	301 - Real	12/1/2025	75,279	1%	897	11.8030	Croton
Consumers Energy Company	20-04-100-010	Croton Township	301 - Real	12/1/2025	149	1%	2	13.5932	Croton
Consumers Energy Company	20-05-400-003	Croton Township	301 - Real	12/1/2025	1,464	1%	20	13.5932	Croton
Consumers Energy Company	20-07-451-001	Croton Township	301 - Real	12/1/2025	5,728	1%	79	13.5932	Croton
Consumers Energy Company	20-07-460-001	Croton Township	301 - Real	12/1/2025	2,940	1%	40	13.5932	Croton
Consumers Energy Company	20-07-461-001	Croton Township	301 - Real	12/1/2025	1,056	1%	14	13.5932	Croton
Consumers Energy Company	20-07-461-002	Croton Township	301 - Real	12/1/2025	1,626	1%	22	13.5932	Croton
Consumers Energy Company	20-07-470-001	Croton Township	301 - Real	12/1/2025	2,445	1%	34	13.5932	Croton
Consumers Energy Company	20-07-470-003	Croton Township	301 - Real	12/1/2025	820	1%	11	13.5932	Croton
Consumers Energy Company	20-07-471-001	Croton Township	301 - Real	12/1/2025	378	1%	5	13.5932	Croton
Consumers Energy Company	20-07-471-002	Croton Township	301 - Real	12/1/2025	820	1%	11	13.5932	Croton
Consumers Energy Company	20-07-471-003	Croton Township	301 - Real	12/1/2025	807	1%	11	13.5932	Croton
Consumers Energy Company	20-08-200-001	Croton Township	301 - Real	12/1/2025	34,123	1%	499	13.5932	Croton
Consumers Energy Company	20-08-400-001	Croton Township	301 - Real	12/1/2025	7,316	1%	100	13.5932	Croton
Consumers Energy Company	20-09-300-004	Croton Township	301 - Real	12/1/2025	1,626	1%	22	13.5932	Croton
Consumers Energy Company	20-15-100-002	Croton Township	301 - Real	12/1/2025	149	1%	2	13.5932	Croton

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	20-17-100-008	Croton Township	301 - Real	12/1/2025	3,985	1%	55	13.5932	Croton
Consumers Energy Company	20-17-100-009	Croton Township	301 - Real	12/1/2025	25,783	1%	354	13.5932	Croton
Consumers Energy Company	20-17-101-001	Croton Township	301 - Real	12/1/2025	9,058	1%	124	13.5932	Croton
Consumers Energy Company	20-17-101-007	Croton Township	301 - Real	12/1/2025	1,291	1%	18	13.5932	Croton
Consumers Energy Company	20-17-200-003	Croton Township	301 - Real	12/1/2025	3,300	1%	45	13.5932	Croton
Consumers Energy Company	20-18-200-016	Croton Township	301 - Real	12/1/2025	3,822,000	1%	52,473	13.5932	Croton
Consumers Energy Company	50-17-000-500	Croton Township	551 - Utility Personal	12/1/2025	110,003	1%	1,221	10.9932	Croton
Consumers Energy Company	060-022-100-003-00	Oscoda Township	301 - Real	12/1/2025	54,813	1%	754	13.6197	Five
Consumers Energy Company	060-023-300-001-00	Oscoda Township	301 - Real	12/1/2025	2,978,293	1%	40,969	13.6197	Five
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	12/1/2025	484,306	1%	6,662	13.6197	Five
Consumers Energy Company	062-019-300-001-00	Oscoda Township	301 -Real	12/1/2025	64,185	1%	883	13.6197	Foote
Consumers Energy Company	062-020-300-001-00	Oscoda Township	301 -Real	12/1/2025	64,928	1%	893	13.6197	Foote
Consumers Energy Company	062-020-300-001-50	Oscoda Township	Assessed W/062-028-100-002-00	12/1/2025	-	1%	-	13.6197	Foote
Consumers Energy Company	062-021-300-001-00	Oscoda Township	301 - Real	12/1/2025	12,762	1%	176	13.6197	Foote
Consumers Energy Company	062-027-100-002-00	Oscoda Township	301 - Real	12/1/2025	108,235	1%	1,489	13.6197	Foote

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	062-028-100-001-00	Oscoda Township	301 - Real	12/1/2025	170,332	1%	2,343	13.6197	Foote
Consumers Energy Company	062-028-100-002-00	Oscoda Township	301 - Real	12/1/2025	155,202	1%	2,135	13.6197	Foote
Consumers Energy Company	062-029-100-001-00	Oscoda Township	301 - Real	12/1/2025	58,678	1%	807	13.6197	Foote
Consumers Energy Company	062-029-100-001-50	Oscoda Township	Assessed W/062-028-100-002-00	12/1/2025	-	1%	-	13.6197	Foote
Consumers Energy Company	062-029-400-001-00	Oscoda Township	Assessed W/062-028-100-002-00	12/1/2025	-	1%	-	13.6197	Foote
Consumers Energy Company	062-030-200-001-00	Oscoda Township	301 - Real	12/1/2025	18,822	1%	259	13.6197	Foote
Consumers Energy Company	062-033-100-001-00	Oscoda Township	301 - Real	12/1/2025	44,338	1%	610	13.6197	Foote
Consumers Energy Company	062-033-100-003-00	Oscoda Township	Assessed W/062-028-100-002-00	12/1/2025	-	1%	-	13.6197	Foote
Consumers Energy Company	062-034-100-001-00	Oscoda Township	301 - Real	12/1/2025	134,860	1%	1,855	13.6197	Foote
Consumers Energy Company	062-034-400-002-00	Oscoda Township	301 - Real	12/1/2025	4,677	1%	64	13.6197	Foote
Consumers Energy Company	062-035-200-001-00	Oscoda Township	301 - Real	12/1/2025	43,615	1%	600	13.6197	Foote
Consumers Energy Company	062-035-200-002-00	Oscoda Township	301 - Real	12/1/2025	27,251	1%	375	13.6197	Foote
Consumers Energy Company	062-035-200-003-00	Oscoda Township	301 - Real	12/1/2025	3,439,485	1%	47,313	13.6197	Foote
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	12/1/2025	220,109	1%	3,028	13.6197	Foote

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	09009010000	Mecosta Township	301 - Real	12/1/2025	30,923	0%	921	29.7945	Hardy
Consumers Energy Company	09010031000	Mecosta Township	301 - Real	12/1/2025	105	0%	3	29.7945	Hardy
Consumers Energy Company	09015001000	Mecosta Township	301 - Real	12/1/2025	39,477	0%	1,176	29.7945	Hardy
Consumers Energy Company	09016001000	Mecosta Township	301 - Real	12/1/2025	62,903	0%	1,874	29.7945	Hardy
Consumers Energy Company	09020001000	Mecosta Township	301 - Real	12/1/2025	9,997	0%	298	29.7945	Hardy
Consumers Energy Company	09020003000	Mecosta Township	301 - Real	12/1/2025	26,709	0%	796	29.7945	Hardy
Consumers Energy Company	09020004000	Mecosta Township	Leased to Mecosta Co Parks	12/1/2025	-	0%	-	29.7945	Hardy
Consumers Energy Company	09021003000	Mecosta Township	301 - Real	12/1/2025	33,688	0%	1,004	29.7945	Hardy
Consumers Energy Company	09021004000	Mecosta Township	301 - Real	12/1/2025	177	0%	5	29.7945	Hardy
Consumers Energy Company	09021006000	Mecosta Township	301 - Real	12/1/2025	6,178	0%	184	29.7945	Hardy
Consumers Energy Company	09022004000	Mecosta Township	301 - Real	12/1/2025	6,300	0%	188	29.7945	Hardy
Consumers Energy Company	09022007000	Mecosta Township	301 - Real	12/1/2025	177	0%	5	29.7945	Hardy
Consumers Energy Company	09028010000	Mecosta Township	301 - Real	12/1/2025	26,447	0%	788	29.7945	Hardy
Consumers Energy Company	09029003000	Mecosta Township	301 - Real	12/1/2025	12,627	0%	376	29.7945	Hardy
Consumers Energy Company	09029007000	Mecosta Township	301 - Real	12/1/2025	2,627	0%	78	29.7945	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	09029010000	Mecosta Township	301 - Real	12/1/2025	177	0%	5	29.7945	Hardy
Consumers Energy Company	09029011000	Mecosta Township	301 - Real	12/1/2025	177	0%	5	29.7945	Hardy
Consumers Energy Company	09030016000	Mecosta Township	301 - Real	12/1/2025	177	0%	5	29.7945	Hardy
Consumers Energy Company	09031001000	Mecosta Township	301 - Real	12/1/2025	33,949	0%	1,011	29.7945	Hardy
Consumers Energy Company	09031002000	Mecosta Township	Leased to Mecosta Co Parks	12/1/2025	-	0%	-	29.7945	Hardy
Consumers Energy Company	09031002500	Mecosta Township	301 - Real	12/1/2025	16,971	0%	506	29.7945	Hardy
Consumers Energy Company	09032001000	Mecosta Township	301 - Real	12/1/2025	32,898	0%	980	29.7945	Hardy
Consumers Energy Company	09032002000	Mecosta Township	Leased to Mecosta Co Parks	12/1/2025	-	0%	-	29.7945	Hardy
Consumers Energy Company	5413006003000	Aetna Township	301 - Real	12/1/2025	94,503	1%	2,720	28.4990	Hardy
Consumers Energy Company	5413018016000	Aetna Township	301 - Real	12/1/2025	25,037	1%	721	28.4990	Hardy
Consumers Energy Company	5413019005000	Aetna Township	301 - Real	12/1/2025	15,461	1%	445	28.4990	Hardy
Consumers Energy Company	16-01-200-002	Big Prairie Township	301 - Real	12/1/2025	38,002	1%	1,545	40.2556	Hardy
Consumers Energy Company	16-01-400-013	Big Prairie Township	301 - Real	12/1/2025	6,956	1%	224	31.9138	Hardy
Consumers Energy Company	16-11-400-002	Big Prairie Township	301 - Real	12/1/2025	35,221	1%	1,432	40.2556	Hardy
Consumers Energy Company	16-12-100-001	Big Prairie Township	301 - Real	12/1/2025	46,638	1%	1,896	40.2556	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-12-200-003	Big Prairie Township	301 - Real	12/1/2025	144,505	1%	4,658	31.9138	Hardy
Consumers Energy Company	16-12-300-001	Big Prairie Township	301 - Real	12/1/2025	530	1%	22	40.2556	Hardy
Consumers Energy Company	16-13-100-001	Big Prairie Township	301 - Real	12/1/2025	45,116	1%	1,834	40.2556	Hardy
Consumers Energy Company	16-13-200-001	Big Prairie Township	301 - Real	12/1/2025	76,398	1%	3,106	40.2556	Hardy
Consumers Energy Company	16-14-300-001	Big Prairie Township	301 - Real	12/1/2025	46,784	1%	1,508	31.9138	Hardy
Consumers Energy Company	16-14-400-001	Big Prairie Township	301 - Real	12/1/2025	55,777	1%	2,268	40.2556	Hardy
Consumers Energy Company	16-15-100-008	Big Prairie Township	301 - Real	12/1/2025	50,578	1%	2,056	40.2556	Hardy
Consumers Energy Company	16-15-200-001	Big Prairie Township	301 - Real	12/1/2025	15,404	1%	626	40.2556	Hardy
Consumers Energy Company	16-15-300-001	Big Prairie Township	301 - Real	12/1/2025	1,114	1%	45	40.2556	Hardy
Consumers Energy Company	16-15-400-001	Big Prairie Township	301 - Real	12/1/2025	2,024	1%	65	31.9138	Hardy
Consumers Energy Company	16-16-400-002	Big Prairie Township	301 - Real	12/1/2025	24,987	1%	1,016	40.2556	Hardy
Consumers Energy Company	16-21-200-002	Big Prairie Township	301 - Real	12/1/2025	939	1%	30	31.9138	Hardy
Consumers Energy Company	16-21-200-003	Big Prairie Township	301 - Real	12/1/2025	10,547	1%	429	40.2556	Hardy
Consumers Energy Company	16-21-400-001	Big Prairie Township	301 - Real	12/1/2025	2,245	1%	91	40.2556	Hardy
Consumers Energy Company	16-22-100-001	Big Prairie Township	301 - Real	12/1/2025	19,400	1%	789	40.2556	Hardy
Consumers Energy Company	16-22-200-003	Big Prairie Township	301 - Real	12/1/2025	19,410	1%	626	31.9138	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-22-400-001	Big Prairie Township	301 - Real	12/1/2025	103,453	1%	3,335	31.9138	Hardy
Consumers Energy Company	16-23-100-001	Big Prairie Township	301 - Real	12/1/2025	4,885	1%	157	31.9138	Hardy
Consumers Energy Company	16-23-100-002	Big Prairie Township	301 - Real	12/1/2025	13,560	1%	437	31.9138	Hardy
Consumers Energy Company	16-23-200-001	Big Prairie Township	301 - Real	12/1/2025	1,491	1%	48	31.9138	Hardy
Consumers Energy Company	16-23-400-002	Big Prairie Township	301 - Real	12/1/2025	9,985	1%	322	31.9138	Hardy
Consumers Energy Company	16-23-400-003	Big Prairie Township	301 - Real	12/1/2025	32,227	1%	1,039	31.9138	Hardy
Consumers Energy Company	16-24-100-001	Big Prairie Township	301 - Real	12/1/2025	232	1%	7	31.9138	Hardy
Consumers Energy Company	16-24-100-002	Big Prairie Township	301 - Real	12/1/2025	14,476	1%	467	31.9138	Hardy
Consumers Energy Company	16-24-200-002	Big Prairie Township	301 - Real	12/1/2025	42,802	1%	1,380	31.9138	Hardy
Consumers Energy Company	16-27-100-001	Big Prairie Township	301 - Real	12/1/2025	920	1%	37	40.2556	Hardy
Consumers Energy Company	16-27-100-003	Big Prairie Township	301 - Real	12/1/2025	5,263	1%	170	31.9138	Hardy
Consumers Energy Company	16-27-200-004	Big Prairie Township	301 - Real	12/1/2025	5,263	1%	170	31.9138	Hardy
Consumers Energy Company	16-27-300-002	Big Prairie Township	301 - Real	12/1/2025	16,392	1%	195	11.8030	Hardy
Consumers Energy Company	16-28-100-006	Big Prairie Township	301 - Real	12/1/2025	22,383	1%	910	40.2556	Hardy
Consumers Energy Company	16-28-200-002	Big Prairie Township	301 - Real	12/1/2025	1,114	1%	45	40.2556	Hardy
Consumers Energy Company	16-28-300-004	Big Prairie Township	301 - Real	12/1/2025	698,008	1%	8,321	11.8030	Hardy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	16-28-400-004	Big Prairie Township	301 - Real	12/1/2025	9,975,630	1%	118,920	11.8030	Hardy
Consumers Energy Company	16-29-400-011	Big Prairie Township	301 - Real	12/1/2025	16,392	1%	195	11.8030	Hardy
Consumers Energy Company	16-33-200-002	Big Prairie Township	301 - Real	12/1/2025	14,134	1%	168	11.8030	Hardy
Consumers Energy Company	50-14-001-600	Big Prairie Township	551 - Utility Personal	12/1/2025	691,994	1%	8,249	11.8030	Hardy
Consumers Energy Company	51-09-024-375-01	Marilla Township	301 - Real	12/1/2025	181,583	1%	5,660	30.8643	Hodenpyl
Consumers Energy Company	51-09-025-100-01	Marilla Township	301 - Real	12/1/2025	26,100	1%	814	30.8643	Hodenpyl
Consumers Energy Company	2312-01-2101	Springville Township	301 - Real	12/1/2025	58,183	1%	1,928	32.8126	Hodenpyl
Consumers Energy Company	2312-02-1101	Springville Township	301 - Real	12/1/2025	98,677	1%	3,270	32.8126	Hodenpyl
Consumers Energy Company	2312-09-4401	Springville Township	301 - Real	12/1/2025	20,765	1%	688	32.8126	Hodenpyl
Consumers Energy Company	2312-10-1201	Springville Township	301 - Real	12/1/2025	136,178	1%	4,513	32.8126	Hodenpyl
Consumers Energy Company	2312-10-4201	Springville Township	301 - Real	12/1/2025	9,815	1%	325	32.8126	Hodenpyl
Consumers Energy Company	2312-11-2101	Springville Township	301 - Real	12/1/2025	89,456	1%	2,965	32.8126	Hodenpyl
Consumers Energy Company	2312-11-2401	Springville Township	301 - Real	12/1/2025	3,956	1%	131	32.8126	Hodenpyl
Consumers Energy Company	2312-15-1201	Springville Township	301 - Real	12/1/2025	58,006	1%	1,922	32.8126	Hodenpyl
Consumers Energy Company	2312-16-1101	Springville Township	301 - Real	12/1/2025	87,649	1%	2,905	32.8126	Hodenpyl
Consumers Energy Company	2312-16-3101	Springville Township	301 - Real	12/1/2025	13,360	1%	443	32.8126	Hodenpyl

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	2312-17-4301	Springville Township	301 - Real	12/1/2025	25,832	1%	856	32.8126	Hodenpyl
Consumers Energy Company	2312-17-4401	Springville Township	301 - Real	12/1/2025	12,094	1%	401	32.8126	Hodenpyl
Consumers Energy Company	2312-19-1301	Springville Township	301 - Real	12/1/2025	82,769	1%	2,743	32.8126	Hodenpyl
Consumers Energy Company	2312-19-2401	Springville Township	301 - Real	12/1/2025	30,443	1%	1,009	32.8126	Hodenpyl
Consumers Energy Company	2312-20-1101	Springville Township	301 - Real	12/1/2025	56,739	1%	1,880	32.8126	Hodenpyl
Consumers Energy Company	2312-20-1102	Springville Township	301 - Real	12/1/2025	8,477	1%	281	32.8126	Hodenpyl
Consumers Energy Company	2312-21-1201	Springville Township	301 - Real	12/1/2025	82,769	1%	2,743	32.8126	Hodenpyl
Consumers Energy Company	2312-21-2201	Springville Township	301 - Real	12/1/2025	3,238	1%	107	32.8126	Hodenpyl
Consumers Energy Company	2312-29-1101	Springville Township	301 - Real	12/1/2025	37,762	1%	1,251	32.8126	Hodenpyl
Consumers Energy Company	2312-30-1101	Springville Township	301 - Real	12/1/2025	3,716,790	1%	123,177	32.8126	Hodenpyl
Consumers Energy Company	2312M-111302	Springville Township	301 - Real	12/1/2025	1,960	1%	65	32.8126	Hodenpyl
Consumers Energy Company	2312M-114201	Springville Township	301 - Real	12/1/2025	23,029	1%	763	32.8126	Hodenpyl
Consumers Energy Company	2312Z-PER-02	Springville Township	551 - Utility Personal	12/1/2025	914,158	1%	30,296	32.8126	Hodenpyl
Consumers Energy Company	2412-36-2301	Wexford Township	301 - Real	12/1/2025	49,017	1%	1,578	31.8798	Hodenpyl
Consumers Energy Company	2412-36-3302	Wexford Township	301 - Real	12/1/2025	53,016	1%	1,707	31.8798	Hodenpyl
Consumers Energy Company	2412-VG-001	Wexford Township	301 - Real	12/1/2025	15,900	1%	512	31.8798	Hodenpyl

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	2412-VS-0103	Wexford Township	301 - Real	12/1/2025	43,182	1%	1,390	31.8798	Hodenpyl
Consumers Energy Company	060-019-200-001-00	Oscoda Township	301 - Real	12/1/2025	36,805	1%	506	13.6197	Loud
Consumers Energy Company	060-021-200-001-00	Oscoda Township	301 - Real	12/1/2025	2,083,305	1%	28,658	13.6197	Loud
Consumers Energy Company	065-VAR-OSC-TWP-00	Oscoda Township	551 - Utility Personal	12/1/2025	293,980	1%	4,044	13.6197	Loud
Consumers Energy Company	68-001-302-072-00	Big Creek Township	301 - Real	12/1/2025	5,045	1%	49	9.7106	Mio
Consumers Energy Company	68-001-303-010-00	Big Creek Township	301 - Real	12/1/2025	4,861	1%	48	9.7106	Mio
Consumers Energy Company	68-001-303-011-00	Big Creek Township	301 - Real	12/1/2025	26,191	1%	257	9.7106	Mio
Consumers Energy Company	68-001-303-032-00	Big Creek Township	301 - Real	12/1/2025	3,598	1%	35	9.7106	Mio
Consumers Energy Company	68-001-304-007-00	Big Creek Township	301 - Real	12/1/2025	525	1%	5	9.7106	Mio
Consumers Energy Company	68-001-304-018-50	Big Creek Township	301 - Real	12/1/2025	46,254	1%	454	9.7106	Mio
Consumers Energy Company	68-001-305-002-00	Big Creek Township	301 - Real	12/1/2025	17,368	1%	170	9.7106	Mio
Consumers Energy Company	68-001-310-001-00	Big Creek Township	301 - Real	12/1/2025	24,806	1%	243	9.7106	Mio
Consumers Energy Company	68-001-311-001-00	Big Creek Township	301 - Real	12/1/2025	59,089	1%	580	9.7106	Mio
Consumers Energy Company	68-001-312-019-00	Big Creek Township	301 - Real	12/1/2025	1,760,142	1%	17,263	9.7106	Mio
Consumers Energy Company	68-001-312-021-00	Big Creek Township	301 - Real	12/1/2025	41,559	1%	408	9.7106	Mio
Consumers Energy Company	68-001-312-022-00	Big Creek Township	301 - Real	12/1/2025	40,833	1%	400	9.7106	Mio

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	68-001-314-001-25	Big Creek Township	301 - Real	12/1/2025	9,451	1%	93	9.7106	Mio
Consumers Energy Company	68-006-307-001-00	Big Creek Township	301 - Real	12/1/2025	5,660	1%	58	10.0834	Mio
Consumers Energy Company	68-001-915-014-00	Big Creek Township	551 - Utility Personal	12/1/2025	1,241,015	1%	12,172	9.7106	Mio
Consumers Energy Company	09001013000	Mecosta Township	301 - Real	12/1/2025	105	0%	3	29.7945	Rogers
Consumers Energy Company	09002005000	Mecosta Township	301 - Real	12/1/2025	122	0%	4	29.7945	Rogers
Consumers Energy Company	09010033000	Mecosta Township	301 - Real	12/1/2025	165	0%	5	29.7945	Rogers
Consumers Energy Company	09011014000	Mecosta Township	301 - Real	12/1/2025	11,049	0%	329	29.7945	Rogers
Consumers Energy Company	09011015000	Mecosta Township	301 - Real	12/1/2025	2,514,855	0%	74,929	29.7945	Rogers
Consumers Energy Company	09014004000	Mecosta Township	301 - Real	12/1/2025	13,155	0%	392	29.7945	Rogers
Consumers Energy Company	09014006000	Mecosta Township	301 - Real	12/1/2025	105	0%	3	29.7945	Rogers
Consumers Energy Company	09014012000	Mecosta Township	301 - Real	12/1/2025	8,610	0%	257	29.7945	Rogers
Consumers Energy Company	09057017000	Mecosta Township	301 - Real	12/1/2025	105	0%	3	29.7945	Rogers
Consumers Energy Company	09998030000	Mecosta Township	551 - Utility Personal	12/1/2025	220,306	0%	6,564	29.7945	Rogers
Consumers Energy Company	51-05-031-100-01	Dickson Township	301 - Real	12/1/2025	5,189,730	1%	192,837	36.7896	Tippy
Consumers Energy Company	51-05-031-225-01	Dickson Township	301 - Real	12/1/2025	52,285	1%	1,943	36.7896	Tippy
Consumers Energy Company	51-05-136-100-01	Dickson Township	301 - Real	12/1/2025	19,396	1%	721	36.7896	Tippy

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	51-05-136-400-00	Dickson Township	301 - Real	12/1/2025	4,158	1%	155	36.7896	Tippy
Consumers Energy Company	51-05-900-026-00	Dickson Township	551 - Utility Personal	12/1/2025	806,413	1%	29,964	36.7896	Tippy
Consumers Energy Company	51-10-005-225-00	Norman Township	301 - Real	12/1/2025	166	1%	6	36.7896	Tippy
Consumers Energy Company	51-10-005-325-00	Norman Township	301 - Real	12/1/2025	1,082	1%	40	36.7896	Tippy
Consumers Energy Company	51-10-006-100-00	Norman Township	301 - Real	12/1/2025	110	1%	4	36.7896	Tippy
Consumers Energy Company	51-10-008-100-01	Norman Township	301 - Real	12/1/2025	22,529	1%	825	36.2702	Tippy
Consumers Energy Company	51-10-016-300-00	Norman Township	301 - Real	12/1/2025	710	1%	26	36.2702	Tippy
Consumers Energy Company	34-080-080-000-015-00	Lyons Township	301 - Real	12/1/2025	1,136	1%	43	37.8595	Webber
Consumers Energy Company	34-080-080-000-025-00	Lyons Township	301 - Real	12/1/2025	2,941	1%	112	37.8595	Webber
Consumers Energy Company	34-080-080-000-030-00	Lyons Township	301 - Real	12/1/2025	5,236	1%	200	37.8595	Webber
Consumers Energy Company	34-080-080-000-035-00	Lyons Township	301 - Real	12/1/2025	3,759	1%	144	37.8595	Webber
Consumers Energy Company	34-080-080-000-040-00	Lyons Township	301 - Real	12/1/2025	9,012	1%	345	37.8595	Webber
Consumers Energy Company	34-080-080-000-050-00	Lyons Township	301 - Real	12/1/2025	478	1%	18	37.8595	Webber
Consumers Energy Company	34-080-080-000-055-00	Lyons Township	301 - Real	12/1/2025	646,800	1%	24,732	37.8595	Webber
Consumers Energy Company	34-080-080-000-055-01	Lyons Township	301 - Real	12/1/2025	6,096	1%	233	37.8595	Webber
Consumers Energy Company	34-080-080-000-055-02	Lyons Township	301 - Real	12/1/2025	2,774	1%	106	37.8595	Webber

Seller	Parcel	Jurisdiction	Type	Lien Date	Taxable Value	Collection Fee %	Total Tax Amount	Millage Rate (est)	Site
Consumers Energy Company	34-080-080-000-055-03	Lyons Township	301 - Real	12/1/2025	2,774	1%	106	37.8595	Webber
Consumers Energy Company	34-080-900-000-045-00	Lyons Township	551 - Utility Personal	12/1/2025	10,956	1%	419	37.8595	Webber
Consumers Energy Company	34-140-040-000-010-00	Portland Township	301 - Real	12/1/2025	127	1%	5	37.8595	Webber
Consumers Energy Company	34-140-040-000-020-00	Portland Township	301 - Real	12/1/2025	17,750	1%	630	35.1471	Webber
Consumers Energy Company	34-140-040-000-025-00	Portland Township	301 - Real	12/1/2025	127	1%	5	37.8595	Webber
Consumers Energy Company	34-140-040-000-030-00	Portland Township	301 - Real	12/1/2025	9,453	1%	336	35.1471	Webber
Consumers Energy Company	34-140-040-000-045-00	Portland Township	301 - Real	12/1/2025	1,883	1%	67	35.1471	Webber
Consumers Energy Company	34-140-040-000-050-00	Portland Township	301 - Real	12/1/2025	262	1%	10	37.8595	Webber
Consumers Energy Company	34-140-040-000-055-00	Portland Township	301 - Real	12/1/2025	1,750	1%	62	35.1471	Webber
Consumers Energy Company	34-140-040-000-060-00	Portland Township	301 - Real	12/1/2025	11,202	1%	398	35.1471	Webber
Consumers Energy Company	34-140-040-000-065-00	Portland Township	301 - Real	12/1/2025	11,202	1%	398	35.1471	Webber
Consumers Energy Company	34-140-040-000-090-00	Portland Township	301 - Real	12/1/2025	1,178	1%	42	35.1471	Webber
				Total 12/1/2023 Property Taxes			1,063,544		
				Total Property Taxes to be Prorated at Closing per Section 8.4(b)			2,459,389.95		

Seller's Property Tax Proration	
Total Prorated Taxes	(1,435,205.64)
Less: Taxes Paid 7/1/2025	1,395,846.00
Less: Taxes Paid 12/1/2025	-
Due to Purchaser at Closing	(39,359.64)

Purchaser's Property Tax Proration	
Total Prorated Taxes	(1,024,184.31)
Less: Taxes Paid 7/1/2025	-
Less: Taxes Paid 12/1/2025	1,063,543.95
Due from Seller at Closing	39,359.64

Exhibit A-1

Legal Description of the Land

Alcona Project

Parcel 1:
Southwest 1/4 of Section 3, Township 25 North, Range 5 East, lying Westerly and Southerly of Alcona Park, under water, EXCEPT small islands.

Parcel 2:
Southeast 1/4 of Section 3, Township 25 North, Range 5 East, lying Southwesterly of the South line of former AuSable & NW D&M Railroad right-of-way - Alcona Park.

Parcel 3:
Southwest 1/4 of Section 3, Township 25 North, Range 5 East, lying Southwesterly of South line of former AuSable & NW D&M Railroad right-of-way and Easterly of Alcona Pond - Alcona Park.

Parcel 4:
East 1/2 of the East 1/2 of Section 4, Township 25 North, Range 5 East, lying Westerly of Alcona Pond - Alcona Park.

Parcel 5:
East 1/2 of the East 1/2 of Section 4, Township 25 North, Range 5 East, EXCEPT Alcona Park, ALSO EXCEPT East of center thread of AuSable River, ALSO EXCEPT islands lying Westerly of said thread.

Parcel 6:
East 1/2 of the Northeast 1/4 of Section 9, Township 25 North, Range 5 East, lying Westerly of Alcona Pond - Alcona Park.

Parcel 7:
East 1/2 of the Northeast 1/4 of Section 9, Township 25 North, Range 5 East, EXCEPT Alcona Park. ALSO the Northeast 1/4 of the Southeast 1/4 of Section 9, Township 25 North, Range 5 East.

Parcel 8:
North 3/4 of Section 10, Township 25 North, Range 5 East, lying above waters of Alcona Pond - Alcona Park, EXCEPT that part lying Northeasterly of centerline of AuSable Road.

Parcel 9:
Entire Section 10, Township 25 North, Range 5 East, EXCEPT Alcona Park, ALSO EXCEPT the South 1/2 of the Southeast 1/4, ALSO EXCEPT the Northeast 1/4 of the Northeast 1/4 lying Northeasterly of the centerline of AuSable Road. All land under water.

Parcel 10:
North 3/4 of West 1/2 of Section 11, Township 25 North, Range 5 East, lying Southwesterly of former AuSable & Northwestern Railroad & Easterly of Alcona Pond - Alcona Park.

Parcel 11:
West 1/2 of Section 11, Township 25 North, Range 5 East, lying South and West of AuSable Road; EXCEPT Alcona Park; ALSO EXCEPT South 1/2 of the Southwest 1/4 of Section 11, Township 25 North, Range 5 East.

Parcel 12:
West 3/4 of Section 14, Township 25 North, Range 5 East, lying Northerly of county road, EXCEPT North 1/2 of the Northwest 1/4 of the Northeast 1/4, ALSO EXCEPT the North 1/2 of the Northeast 1/4 of the Northwest 1/4 & Dam.

Parcel 13:
Southeast 1/4 of the Northeast 1/4 of Section 15, Township 25 North, Range 5 East.

Parcel 14:
Southeast 1/4 of the Northeast 1/4 of Section 16, Township 25 North, Range 5 East.

Parcel 15:
Southwest 1/4 of the Northeast 1/4 of Section 16, Township 25 North, Range 5 East.

Calkins Project

Parcel 1:
THAT PT OF THE W 1/2 OF THE NW 1/4 OF SECTION LYING BELOW CONTOUR 618 USGS DATUM SEC 21 T2N R13W TAX MAP 0.16 AC

Parcel 2:
THAT PT OF THE W 1/2 OF SEC LYING SW'LY OF HWY M}40 & BELOW CONTOUR 618 USGS DATUM ALSO THE W 31.95 AC OF THAT PT OF THE S 1/2 OF THE SW 1/4 LYING N'LY OF KALAMAZOO RIVER SEC 18 T2N R13W TAX MAP: 15.74 AC

Parcel 3:
THAT PART OF SECTION LYING BELOW CONTOUR 618 U S G S DATUM SEC 19 T2N R13W TAX MAP: 118.13 AC

Parcel 4:
THAT PART OF THE NE 1/4 & THE W 1/2 OF SEC LYING BELOW CONTOUR 618 U S G S DATUM SEC 20 T2N R13W TAX MAP: 17.88 AC

Parcel 5:
THAT PT W 1/2 LYING S & W OF KALAMAZOO RIVER & BELOW CONTOUR 618 SEC 20 T2N R13W TAX MAP: 121.82 AC.

Parcel 6:
GOVT LOT 5 ALSO THAT PART OF GOVT LOT 6 & S 1/2 SW 1/4 LYING BELOW CONTOUR 618 SEC 14 T2N R14W.

Parcel 7:
THAT PT OF LOT 1 SEC 13 & GOVT LOT 8 OF SEC 14 T2N R14W LYING ABOVE CONTOUR 618 BEING AN ISLAND IN THE RIVER, CONTAINING 10 ACRES OF LAND MORE OR LESS SEC 14 T2N R1W TAX MAP: 11.57 AC.

Parcel 8:
ALL THAT PART SEC 14 LYING BETWEEN RIGHT BANK OF KALAMAZOO RIVER & CONTOUR 618 ON SAID RIVER BANK EX THAT PART OF GOVT LOT 8 LYING ABOVE CONTOUR 618 SEC 14 T2N R14W.

Parcel 9:
GOVT LOT 9 EX THAT PART LYING ABOVE CONTOUR 618 SEC 14 T2N R14W.

Parcel 10:
THAT PART OF GOVT LOTS 2 & 3 LYING BELOW CONTOUR 618 SEC 15 T2N R14W TAX MAP: 43.23 AC.

Parcel 11:
GOVT LOT 3 SEC 13 T2N R14W TAX MAP: 41.16 AC

Parcel 12:
ALL THAT PART OF GOVT LOT 6 LYING BELOW CONTOUR 618 ALSO THAT PART E 1/2 NE 1/4 LYING S OF COUNTY ROAD & BELOW CONTOUR 618 SEC 13 T2N R14W.

Parcel 13:
GOVT LOT 4 SEC 13 T2N R 14W TAX MAP 5.73 AC.

Parcel 14:
THAT PT OF SE 1/4 LYING S OF THE KALA RIVER & BELOW CONTOUR 618 SEC 13 T2N R14W TAX MAP: 6.7 ac

Parcel 15:
GOVT LOT 4 SEC 14 T2N R14W TAX MAP: 28.96 ac

Parcel 16:
A STRIP OF LAND 82 FT WIDE ACROSS E 1/2 OF SE 1/4 OF SEC BEING THE FORMER MICHIGAN RAILROAD RT-OF-WAY SEC 22 T2N R13W SKETCH: 2.49 AC.

Parcel 17:
A STRIP OF LAND 63 FT WIDE ACROSS W 1/2 SE 1/4 OF SEC BEING THE FORMER MICHIGAN RAILROAD RT-OF-WAY SEC 22 T2N R13W SKETCH: 1.91 AC.

Parcel 18:

BEG AT E 1/8 POST SE 1/4 SEC 10 TH S ON CTR LIN 28TH ST 165 FT TH S 88 DEG 15'40" W PPL TO CTR LIN 120TH AVE 660 FT TH N 165 FT TO CTR LIN 120TH AVE TH N 88 DEG 15' 40" E ON SD CTR LIN 660 FT TO POB SEC 10 T2N R13W

Parcel 19:
S 528 FT OF W 330 FT OF NE 1/4 SW 1/4 ALSO THAT PT OF THE REMAINDER OF SD NE 1/4 SW 1/4 & GOVT LOTS 2 & 5 LYING BELOW CONTOUR 618 ALSO THAT PT NE 1/4 NW 1/4 SEC 24 LYING NLY OF KALAMAZOO RIVER SEC 13 T2N R14W.

Parcel 20:
THAT PART OF S 1/2 NW 1/4 LYING BELOW CONTOUR 618 ALSO GOVT LOT 1 EX THAT PART LYING ABOVE CONTOUR 618 SEC 13 T2N R14W. TAX MAP: 36.91 AC

Parcel 21:
THE DAM BEING THE SO-CALLED CALKINS BRIDGE DAM & SITE (HYDROELECTRIC PLANT) LOCATED IN THE N 1/2 N 1/2 NW 1/4 NW 1/4 SEC 15 T2N R14W TAX MAP: 0.49 AC

Parcel 22:
THAT PART OF GOVT LOT 1 LYING S OF HWY AND BELOW CONTOUR 618 NE 1/4 NW 1/4 SEC 15 T2N R14W TAX MAP: 16.54 AC (01)

Parcel 23:
GOVT LOTS 4, 5, 6 ALSO SW 1/4 NW 1/4 ALSO SE FR 1/4 SEC 15 EX COM NW COR OF SEC TH E 704.71' TO KALAMAZOO RIVER TH S 6 DEG 09' 45" E ALG SD RIVER 115.79' TO C/L OF ALLEGAN DAM RD TH N 83 DEG 18' 05" W ALG SD C/L 120.59' TH S 31 DEG 30' 31" W 132.72' TH S 4 DEG 02' 43" W 272' M/L TO CONTOUR 618 TH SW'LY ALG SD CONTOUR TO W LIN OF SEC TH N 1109' M/L TO POB SEC 15 T2N R14W TAX MAP: 265.16 AC.

Parcel 24:
SW 1/4 EX THAT PART LYING ABOVE CONTOUR 618 SEC 15 T2N R14W TAX MAP: 124.28 AC.

Parcel 25:
THAT PART E 1/4 OF SECTION LYING BELOW CONTOUR 618 SEC 16 T2N R14W TAX MAP: 21.45 AC.

Parcel 26:
THAT PART OF N 1/2 LYING BELOW CONTOUR 618 SEC 22 T2N R14W TAX MAP: 117.84 AC.

Parcel 27:
THAT PART NE 1/4 LYING BELOW CONTOUR 618 SEC 23 T2N R14W TAX MAP: 24.74 AC.

Parcel 28:
THAT PART NW 1/4 NW 1/4 LYING BELOW CONTOUR 618 SEC 23 T2N R14W TAX MAP: 26.27 AC.

Parcel 29:
THAT PART OF GOVT LOTS 1 & 3 LYING BELOW CONTOUR 618 SEC 24 T2N R14W TAX MAP: 6.24 AC.

Parcel 30:
GOVT LOT 2 SEC 24 T2N R14W TAX MAP: 10.4 AC.

Parcel 31:
ALL THAT PART W 1/2 NW 1/4 GOVT LOT 4 & NE 1/4 NW 1/4 LYING BELOW CONTOUR 618 SEC 24 T2N R14W TAX MAP 94 54 AC.

Parcel 32:
ALL THAT PT SW 1/4 LYING BETWEEN THE LEFT BANK OF KALAMAZOO RIVER AND CONTOUR 618 ON SD RIVER BANK SEC 21. TAX MAP: 60.31 AC.

Parcel 33:
ISLAND NO. 5 SEC 21 TAX MAP: 0.96 AC.

Parcel 34:
LOTS 135, 136, 140, 141 & 142 O. P. SEC 28.

Parcel 35:
THAT PT NW 1/4 LYING N OF PARK DRIVE CT BETWEEN THE LEFT BANK OF KALAMAZOO RIVER AND CONTOUR 618 ON SD RIVER BANK SEC 28. TAX MAP: 0.38AC.

Parcel 36:
LOTS 1102 TO 1104 INC 1121 TO 1124 INC O. P. SEC 28. TAX MAP: 1.56 AC

Parcel 37:
LOTS 1105 & 1120 ALSO ELY 1/2 OF LOTS 1106 & 1119 LYING BELOW CONTOUR 618 O. P. SEC 28. TAX MAP: 0.33 AC.

Parcel 38:
LOTS 1107 & 1118 ALSO WLY 1/2 LOTS 1106 & 1119 O. P. SEC 28 TAX MAP: 0.6 AC.

Parcel 39:
LOT 1125, 1126, & 1127 O. P. SEC 28.

Parcel 40:
THAT PT OF NE 1/4 SE 1/4 NELY OF KALAMAZOO RIVER SEC 20.

Parcel 41:
ALL THAT PT W 1/2 SE 1/4 LYING BETWEEN RIGHT BANK OF KALAMAZOO RIVER AND CONTOUR 618 SEC 20.

Parcel 42:
THAT PT SW 1/4 LYING S OF RIVERVIEW ADD & SELY OF KALAMAZOO RIVER EX PT SE OF PMRR ALSO EX COM ON S SEC LINE AT THE PRODUCED W LINE OF ALLETTS ADD TH N 30 DEG W TO CONTOUR 618 TH NELY ALONG SD CONTOUR TO A PT WHICH IS 348.90 FT N OF S SEC LINE THE TO PMRR THE SLY ALONG SD RR TO SEC LINE TH W TO BEG ALSO EX N 280.5 FT OF THAT PT LYING E OF CONTOUR 618 SEC 21.

Parcel 43:
S 208.5 FT OF THAT PT NE 1/4 SW 1/4 LYING E OF KALAMAZOO RIVER EX PT LYING W OF CONTOUR 618 SEC 21.

Parcel 44:
ISLAND NO. 4 SEC 28.

Parcel 45:
THAT PART GOVT LOT 1 LYING N OF HIGHWAY SEC 15 T2N R14W.

Parcel 46:
LOT 24 H. S. HIGGINBOTHAM ADDITION. TAX MAP: 0.19 AC.

Cooke Project

PARCEL 1:
The West 1/2 of the Northeast 1/4 of Section 26, Town 24 North, Range 6 East, EXCEPT commencing at the Northeast corner of said Section, thence West along the North Section line 1311.38 feet to the East 1/16th line of said Section; thence South along said 1/16th line 858 feet to the point of beginning; thence continuing South 125 feet; thence North 42 degrees West 108.7 feet; thence North 58 degrees East 85.98 feet to said East 1/16th line and the Point of Beginning.

PARCEL 2:
South 1/2 of the Southwest 1/4 of the Northeast 1/4, the South 1/2 of the South 1/2 of the Northwest 1/4, and the Southwest 1/4 EXCEPT the Southwest 1/4 of the Southwest 1/4; ALSO the West 1/2 of the Southeast 1/4 EXCEPT commencing North 17 degrees 44 minutes East 1289.49 feet from the Southwest corner thereof, thence North 29 degrees 43 minutes West 150 feet; thence South 60 degrees 17 minutes West 200 feet; thence South 29 degrees 43 minutes East 150 feet; thence North 60 degrees 17 minutes East 200 feet to the Point of Beginning. All being in Section 15, Town 24 North, Range 7 East.

PARCEL 3:
The North 1/2 of the Southeast 1/4 of the Northeast 1/4, Section 20, Town 24 North, Range 7 East, EXCEPT commencing South 1 degree 2 minutes West 1348.41 feet along East Section line; thence South 85 degrees

48 minutes West 898.68 feet; thence North 89 degrees 35 minutes 56 seconds West 431.24 feet; thence North 0 degrees 52 minutes 56 seconds East along 1/8 Section line 156.84 feet; thence South 89 degrees 35 minutes 36 seconds East 1326.65 feet; thence South 0 degrees 2 minutes West 86.98 feet to the Point of Beginning.

PARCEL 4:
The West 200 feet of the North 1980 feet of the Northwest 1/4 of Section 21, Town 24 North, Range 7 East EXCEPT beginning at the Northwest corner of said Section; thence North 89 degrees 5 minutes East along the North Section line, 6.09 feet; thence South 1 degree 1 minute 40 seconds East 1238.45 feet; thence South 2 degrees 59 minutes 20 seconds East 105.80 feet; thence South 85 degrees 48 minutes West 58.32 feet to the West Section line; thence North 1 degree 2 minutes East 1348 feet to the Point of Beginning.

PARCEL 5:
The Northwest 1/4 of the Northeast 1/4 of Section 29, Town 24 North, Range 7 East.

PARCEL 6:
A 264 foot wide right of way across the Northwest 1/4 of the Southeast 1/4 and the Northeast 1/4 of the Northeast 1/4 of Section 29, Town 24 North, Range 7 East, as depicted in Survey recorded in Liber 331, Page 378, Iosco County Records.

PARCEL 7:
The Southeast 1/4 of the Southwest 1/4 of the Northwest 1/4 of Section 21, Town 24 North, Range 7 East, EXCEPT the East 50 feet of the South 110 feet of said parcel.

Croton Project

Parcel 1:
NW 1/4, EXC W 1/2 THEREOF, ALSO GOV'T LOT 5 & 9 SEC 32, T13N R11W.

Parcel 2:
THAT PART OF GOV'T LOT 2 LYING BELOW EL. 722.5 U.S.G.S. DATUM. SEC 4, T12N R11W.

Parcel 3:
GOV'T LOT 4 ALSO THAT PART OF GOV'T LOTS 1,2 & 5 & SW FRL1/4 & NW1/4 SE1/4 LYING BELOW EL. 722.5 FT U.S.G.S. DATUM SEC 5, T12N R11W.

Parcel 4:
LOTS 1 TO 4 INC. BLK 1 ALSO BLK2 MITCHELL'S ADD TO CROTON.

Parcel 5:
ENTIRE BLK 5 MITCHELL'S ADD TO VILL. OF CROTON.

Parcel 6:
LOTS 1,2, & 3 BLK 6 MITCHELL'S ADD TO CROTON.

Parcel 7:
LOTS 4 TO 8 INCL BLK 6 MITCHELL'S ADD TO VILL. OF CROTON.

Parcel 8:
LOTS 1 TO 6 INC BLK 8 MITCHELL'S ADD TO VILL. OF CROTON.

Parcel 9:
LOTS 9 & 10 BLK 8 MITCHELL'S ADD TO CROTON.

Parcel 10:
LOT 4 BLK 7 MITCHELL'S ADD TO VILL. OF CROTON.

Parcel 11:
LOTS 2 & 3 BLK 7 MITCHELL'S ADD TO CROTON.

Parcel 12:
LOT 1 & THAT PART SE1/4 LYING E'LY OF EXT OF SD LOT LINES BLK 7 MITCHELL'S ADD TO VILL. OF CROTON.

Parcel 13:
GOV'T LOT 1 ABOVE SD EL. 722.5 FT ALSO THAT PART SE1/4 NE1/4 LYING N GRAND RAPIDS ST. SEC 8, T12N RTIW.

Parcel 14:
ALL THAT PART SEC 8 LYING BELOW EL. 722.5 FT U.S.G.S. DATUM EX GOV’T LOTS 2 & 3 SEC 8, T12N R11W.

Parcel 15:
THAT PART OF W 3/4 OF S 1/2 LY-ING BELOW EL.722.5 FT U.S.G.S. DATUM SEC 9, T12N R11W.

Parcel 16:
THAT PART OF THE N 1/2 NW1/4 LYING BELOW EL. 722.5 FT U.S. G.S. DATUM SEC 15, T12N R11W.

Parcel 17:
PT NW1/4 DESC AS LY'G S OF VILLAGE OF CROTON AND NW'LY OF CROTON DR SEC 17, T12N R11W.

Parcel 18:
PT NW1/4 LY'G SE'LY OF C/L CROTON-HARDY DR AND S'LY OF THE FOLLOWING DESC LN, COM 903.57 FT S AND 2298.14 FT W OF N1/4 COR OF SD SEC TO POB OF SD LN, TH S'LY ALG C/L CROTON-HARDY DR 430 FT, SE'LY IN A STRAIGHT LN TO A PT ON N & S 1/4 LN WHICH IS 400 FT S'LY ALG 1/4 LN FROM ITS INTERSECTION WITH C/L OF ELM AVE AND PLACE OF ENDING SEC 17, T12N R11W.

Parcel 19:
LOTS 1 TO 7 INC EXC E 132 FT LOTS 2 THRU 7, ALSO EXC PART LOT 1COM 20 FT N OF SE COR, TH W PAR TO S LOT LINE 132 FT, N PAR TO E LINE TO A PT 30 FT SE'LY MEAS AT RT ANG FROM HIGHWATER MARK OF CROTON POND, NE'LY ALG LINE DRAWN E'LY OF & 30 FT DISTANCE FROM HIGHWATER MARK TO A PT 40 FT S OF N LINE LOT 1, E PAR WITH N LOT LINE TO E LOT LINE, S ALG E LOT LINE 162.31 FT TO POB BLK 9 VILLAGE OF CROTON.

Parcel 20:
W 16 FT LOTS 8 & 9 ALSO S'LY 15 FT OF E 132 FT OF LOT 9 BLK 9 VILLAGE OF CROTON.

Parcel 21:
THAT PART OF NE1/4 NE1/4 LYING BELOW EL722.5 FT U.S.G.S. DATUM SEC 17, T12N R11W.

Parcel 22
GOV'T LOTS 1 & 6. (CROTON DAM) SEC. 18, T12N R11W.

Five Channels Project

060-023-300-001-00
155 acres in the Southwest 1/4 of Section 23, Town 24 North, Range 6 East, except commencing South 88 degrees 28 minutes West 354.62 feet of North and South 1/4 post commence to Sections 23 and 26; thence North 52 degrees 29 minutes 30 seconds West 159.55 feet; thence South 37 degrees 30 minutes 30 seconds West 129.5 feet; thence South 88 degrees 38 minutes West along section line commence to Sections 23 and 26 205.53 feet to point of beginning except that part of the Northwest 1/4 of Southwest 1/4 and North 1/2 of NE 1/4 of Southwest 1/4 lying Northerly and Northeasterly of center thread of Ausable River also Southwest 1/4 of Southeast 1/4 of Channel Dam except commence on Westerly line of M65 170 feet Southerly from South 1/8 line of Section 23; thence South 88 degrees 34 minutes West 138.34 feet; thence South 16 degrees 4 minutes West 443 feet; thence South 82 degrees 55 minutes East 20.8 feet to Westerly line of M65; thence Northerly on M65 496.77 feet to Point of Beginning.

060-022-100-003-00
All that part of the Northwest 1/4 and Southwest 1/4 of Northeast 1/4 and Southeast 1/4 lying Southerly and Westerly of center thread of Ausable River, Section 22, Town 24 North, Range 6 East.

060-023-300-001-00
155 acres in the Southwest 1/4 of Section 23, Town 24 North, Range 6 East, except commencing South 88 degrees 28 minutes West 354.62 feet of North and South 1/4 post commence to Sections 23 and 26; thence North 52 degrees 29 minutes 30 seconds West 159.55 feet; thence South 37 degrees 30 minutes 30 seconds West 129.5 feet; thence South 88 degrees 38 minutes West along section line commence to Sections 23 and 26 205.53 feet to point of beginning except that part of the Northwest 1/4 of Southwest 1/4 and North 1/2 of NE 1/4 of Southwest 1/4 lying Northerly and Northeasterly of center thread of Ausable River also Southwest 1/4 of Southeast 1/4 of Channel Dam except commence on Westerly line of M65 170 feet Southerly from South 1/8 line of Section 23; thence South 88 degrees 34 minutes West138.34 feet; thence South 16 degrees 4 minutes West 443 feet; thence South 82 degrees 55 minutes East 20.8 feet to Westerly line of M65; thence Northerly on M65 496.77 feet to Point of Beginning.

060-022-100-003-00
All that part of the Northwest 1/4 and Southwest 1/4 of Northeast 1/4 and Southeast 1/4 lying Southerly and Westerly of center thread of Ausable River, Section 22, Town 24 North, Range 6 East.

Foote Project

Parcel 1:
Land situated in Township 24 North, Range 8 East, Section 19 a 200 M/L South 1/2 except Northeast 1/4 of Southwest 1/4 except part of South 1/2 of Southeast 1/4 and except South 1/2 of Southeast 1/4 of Southwest 1/4 lying Southerly of center Thread of Au Sable River and a strip of land 251 feet wide in the South 1/2 of Southeast 1/4 of Southwest 1/4.
For informational purposes only: 062-019-300-001-00

Parcel 2:
Land situated in Township 24 North, Range 8 East, Section 20 a 202 South 1/2 of Southeast 1/4 except that part lying South of Au Sable River also Southwest 1/4 except that part of Southeast 1/4 of Southwest 1/4 lying South of Au Sable River and except that part of Southwest 1/4 of Southwest 1/4 lying Southerly and Westerly of center of Thread of Au Sable River.
For informational purposes only: 062-020-300-001-00

Parcel 3:
Land situated in Township 24 North, Range 8 East, Section 20 A 1 Part of the Southwest 1/4 of Southeast 1/4 and Southeast 1/4 Southwest 1/4 lying South of Au Sable River (part of Old Orchard Park), assessed with 062-028-100-002-00.
For informational purposes only: 062-020-300-001-50

Parcel 4:
Land situated in Township 24 North, Range 8 East, Section 21 a 40 Southwest 1/4 of Southwest 1/4.
For informational purposes only: 062-021-300-001-00

Parcel 5:
Land situated in Township 24 North, Range 8 East, Section 27 A336.87 Southwest 1/4 of Northeast 1/4 except North 750 feet also South 1/2 of Northwest 1/4 also South 1/2 except East 1/2 of Southeast 1/4 also except North 175 feet of East 100 feet of Southwest 1/4 of Southeast 1/4.
For informational purposes only: 062-027-100-002-00

Parcel 6:
Land situated in Township 24 North, Range 8 East, Section 28 a 530 entire section except Old Orchard Park and except North 1/2 of Northeast 1/4.
For informational purposes only: 062--028-100-001-00

Parcel 7:
Land situated in Township 24 North, Range 8 East, Section 28 a 30 that part of West 1/2 of section lying Southerly of Foote Pond and Northerly of River Road (part of Old Orchard Park), assessment includes 062-020-300-001-50 and 062-029-100-001-50 and 062-033-100-003-00 and 062-028-100-002-00 and 062-029-400-001-00.
For informational purposes only: 062-028-100-002-00

Parcel 8:
Land situated in Township 24 North, Range 8 East, Section 29 Northeast 1/4 except that part lying Southerly and Westerly of Au Sable River East 1/2 of Northwest 1/4 except that part lying Easterly of Au Sable River that part of Northwest 1/4 of Northwest 1/4 lying Northerly of center Thread of Au Sable River.
For informational purposes only: 062-029-100-001-00

Parcel 9:
Land situated in Township 24 North, Range 8 East, Section 29 A 82 M/L West 1/2 of Northeast 1/4 lying Westerly of Au Sable River and East 1/2 of Northwest 1/2 lying Easterly of Au Sable River (part of Old Orchard Park), assessed with 062-028-100-002-00.
For informational purposes only: 062-029-100-001-50

Parcel 10:
Land situated in Township 24 North, Range 8 East, Section 29 A 69 that part of East 1/2 of said section lying Southerly of Foote Pond and Northerly of River Road also East 300 feet of North 1/2 of Southwest 1/4 (part of Old Orchard Park), assessed with 062-028-100-002-00.
For informational purposes only: 062-029-400-001-00

Parcel 11:
Land situated in Township 24 North, Range 8 East, Section 30 A 59 M/L that part of the Northwest 1/4 lying Northerly of the center Thread of Au Sable and North 300 feet of South line of the Northwest 1/4 and a strip of land 251 feet wide commence at West 1/4 corner of Section 19, Town 24 North, Range 8 East; thence South 0 degrees 41 minutes West along West line 178.62 feet to the center of electric line; thence South 27 degrees 01 minute East 1927 feet; thence South 43 degrees 47 minutes East to a point on the North line of Section 30 and to point of beginning; thence 43 degrees 47 minutes East 1469 feet; thence 13 degrees 13 minutes West to a point 300 feet North of South line of Northwest 1/4.
For informational purposes only: 062-030-200-001-00

Parcel 12:
Land situated in Township 24 North, Range 8 East, Section 33 A 105 Northeast 1/4 except Southwest 1/4 of Northeast 1/4 and except Old Orchard Park also Northeast 1/4 of Northwest 1/4 except Old Orchard Park.
For informational purposes only: 062-033-100-001-00

Parcel 13:
Land situated in Township 24 North, Range 8 East, Section 33 A 20 that part of North 1/2 of North 1/2 of said section lying Southerly of Foote Pond and Northerly of River Road (part of Old Orchard Park), assessed with 062-028-100-002-00.
For informational purposes only: 062-033-100-003-00

Parcel 14:
Land situated in Township 24 North, Range 8 East, Section 34 A 420 North 1/2 of section and Northeast 1/4 of Southwest 1/4 and North 1/2 of Southeast 1/4 except that part Southerly of Rea Road.
For informational purposes only: 062-034-100-001-00

Parcel 15:
Land situated in Township 24 North, Range 8 East, Section 24 A 15 that part of Northeast 1/4 of Southeast 1/4 lying Southerly of Rea Road.
For informational purposes only: 062-034-400-002-00

Parcel 16:
Land situated in Township 24 North, Range 8 East, Section 35 A 139.15 North 1/2 of Southwest 1/4 and Northwest 1/4 except Foote Dam Site and except part lying Northerly of Rea Road and except Westerly of line described as beginning at the Northwest corner; thence South 5 degrees 13 minutes 35 seconds East 751.1 feet; thence South 27 degrees 37 minutes 15 seconds East 965.7 feet; thence South 58 degrees 18 minutes West 133.3 feet; thence South 85 degrees 15 minutes 20 seconds West 61.5 feet; thence South 22 degrees 4 minutes East 95.7 feet; thence South 67 degrees 45 minutes 20 seconds West 42.8 feet; thence South 22 degrees 33 minutes East 141.9 feet; thence North 67 degrees 42 minutes 25 seconds East 41.6 feet; thence South 6 degrees 41 minutes 20 seconds East 215.7 feet; thence South 26 degrees 51 minutes 45 seconds West 910.4 feet; thence South 55 degrees 44 minutes 20 seconds West to West section line; thence North on said West line to point of beginning.
For informational purposes only: 062-035-200-001-00

Parcel 17:
Land situated in Township 24 North, Range 8 East, Section 35 A 85.35 part of Northwest 1/4 lying Northerly of Rea Road and Easterly of line described as beginning at the Northwest 1/4; thence South 5 degrees 13 minutes 35 seconds East 751.1 feet; thence South 27 degrees 37 minutes 15 seconds East 965.7 feet; thence South 58 degrees 18 minutes West 133.3 feet; thence South 85 degrees 15 minutes 20 seconds West 61.5 feet; thence South 22 degrees 4 minutes East 95.7 feet; thence South 67 degrees 45 minutes 20 seconds West 42.8 feet; thence South 22 degrees 33 minutes East 141.9 feet; thence North 67 degrees 42 minutes 25 seconds East 41.6 feet; thence South 6 degrees 41 minutes 20 seconds East 215.7 feet; thence South 26 degrees 51 minutes 45 seconds West 910.4 feet; thence South 55 degrees 44 minutes 20 seconds West to West section line; thence North of said West line to point of beginning.
For informational purposes only: 062-035-200-002-00

Parcel 18:
Foote Dam Site in Township 24 North, Range 8 East, Section 35 a 15.5 part of the West 1/2 commence at the Northwest corner; thence South 5 degrees 13 minutes 35 seconds East 751.1 feet; thence South 27

degrees 37 minutes 15 seconds East 965.7 feet; thence South 58 degrees 18 minutes West 133.3 feet; thence South 85 degrees 15 minutes 20 seconds West 61.5 feet; thence South 22 degrees 4 minutes East 95.7 feet; thence South 67 degrees 45 minutes 20 seconds West 42.8 feet; thence South 22 degrees 33 minutes East 141.9 feet; thence North 67 degrees 42 minutes 25 seconds East 41.6 feet; thence South 6 degrees 41 minutes 20 seconds East 215.7 feet; thence South 26 degrees 51 minutes West 910.4 feet; thence South 55 degrees 44 minutes 20 seconds West to West section line North on said West line to point of beginning Foote Dam Site.
For informational purposes only: 062-035-200-003-00

Hardy Project

Parcel 1:
Government Lots 1, 2, 3, 5 and 6, Section 9, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 2:
So much of the Southwest 1/4 of the Southwest 1/4 of Section 10, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, as lies below an elevation of 835 feet, United States Geological Survey Datum (mean tide at New York City), together with a strip of land 200 feet wide immediately above and adject to the line established by such elevation.

Parcel 3:
Government Lots 1, 2, 3, 4, 5, 6 and 7, Section 15, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM That part of Government Lots 2, 3, 5 and 6 of Section 15, Township 14 North, Range 10 West, described as: Beginning at a point on the East and West 1/4 line of said section, which said point is South 89 degrees 33 minutes 39 seconds West, 1941.97 feet from the East 1/4 corner of said section; thence continuing along said East and West 1/4 line of said section South 89 degrees 33 minutes 39 seconds West 641.36 feet; thence North 21 degrees 07 minutes 34 seconds West, 2738.22 feet to the point of curvature of a 11,609.16 foot radius curve to the right; thence Northwesterly along the arc of said curve 217.167 feet (said curve having a chord bearing North 20 degrees 35 minutes 25 seconds West, 217.164 feet) to a point on the North line of said section; thence along said North line of said section South 88 degrees 23 minutes 16 seconds East, 648.35 feet; thence South 21 degrees 07 minutes 34 seconds East, 2931.27 feet to the point of beginning; Together with all rights of ingress and egress, if any there be, to, from, and between the above described lands and the remainders of said Government Lots 2, 3, 5 and 6. ALSO that part of said Government Lot 6 of Section 15, Township 14 North, Range 10 West described as: Beginning at a point on the East and West 1/4 line of said section, which said point is South 89 degrees 33 minutes 39 seconds West, 1823.73 feet from the East ¼ corner of said section; thence continuing along said East and West 1/4 line of said section South 89 degrees 33 minutes 39 seconds West, 118.24 feet; thence North 21 degrees 07 minutes 34 seconds West, 106.89 feet; thence North 89 degrees 33 minutes 39 seconds East, 156.00 feet; thence South 00 degrees 26 minutes 21 seconds East, 100.0 feet to the point of beginning. The Lands described above in fee contains 41.17 acres, more or less, of which 0.58 acres, more or less, are subject to the existing right of way.

Parcel 4:
Northeast 1/4 of the Northeast 1/4 and Southwest 1/4 of the Northeast 1/4 of Section 16, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. AND Government Lots 1, 2, 3, 4, 5, 6 and 7, Section 16, Township 14 North, Range 10 West. AND Northwest 1/4 of Southwest 1/4 of Section 16, Township 14 North, Range 10 West AND The Northwest 1/4 of the Northeast 1/4 the Southeast 1/4 of Northeast 1/4 and Southwest 1/4 of the Southwest 1/4 of Section 16, all being in Township 14 North, Range 10 West. EXCEPTING THEREFROM The West 1/2 of the Southwest 1/4 and the West 40 acres of Government Lot 5, all in Section 16, Town 14 North, Range 10 West.

Parcel 5:
Government Lot 4, Section 20, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM Part of Government Lot 4, Section 20, Town 14 North, Range 10 West, described as follows: Commencing at the Northeast corner; thence South 148.5 feet to the point of beginning; thence South 165 feet; thence West 132 feet; thence North 165 feet; thence East 132 feet to the point of beginning.

Parcel 6:
Government Lots 1, 2, 3, 5 and 6, Section 20, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM, a parcel of land in the Southwest 1/4 of Section 20, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, described as: Commencing at the Southeast corner of Section 20, Town 14 North, Range 10 West; thence West along the South Section line 361 feet to the point of beginning; thence North 104 feet; thence North 51 degrees West 208 feet; thence North 25 degrees West 782 feet; thence West to the Muskegon River; thence Southeasterly along the Muskegon River to the South line of Section 20; thence East along the South Section line to the point of beginning.

Parcel 7:
A parcel of land in the Southeast 1/4 of Section 20, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, described as: Commencing at the Southeast corner of Section 20, Town 14 North, Range 10 West; thence West, along the South Section line, 361 feet to the POINT OF BEGINNING; thence North 104 feet; thence North 51 degrees West 208 feet; thence North 25 degrees West 782 feet; thence West to the Muskegon River; thence Southeasterly along the Muskegon River to the South line of Section 20; thence East, along the South Section line, to the point of beginning.

Parcel 8:
Government Lots 1, 2, 3, 4, 5, 6, 7 and 9, Section 21, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM The West 40 acres of Government Lot 2; the North 40 acres of Government Lot 3, thereof.

Parcel 9:
A parcel of land in the Township of Mecosta, Mecosta County, Michigan, described as: So much of the following described land as lies below an elevation of 835 feet USGS Datum (mean tide at New York City), together with a strip of land 200 feet wide immediately above and adjacent to the line established by such elevation to wit: Lot number 8 of Section 21, Town 14 North, Range 10 West. EXCEPTING THEREFROM:

A part of Government Lot 8, Section 21, Town 14 North, Range 10 West, described as follows: Begin at the South 1/4 corner of said Section 21; run thence North 00 degrees 21 minutes 18 seconds East, along the North & South 1/4 line 338 feet; thence South 84 degrees 52 minutes 46 seconds East, 135.27 feet; thence South 86 degrees 00 minutes 16 seconds East, 160.31 feet; thence North 88 degrees 56 minutes 20 seconds East, 300.08 feet; thence North 84 degrees 56 minutes 38 seconds East, 301.33 feet; thence North 82 degrees 52 minutes 10 seconds East, 100.85 feet; thence North 78 degrees 10 minutes 15 seconds East, 105.15 feet; thence North 63 degrees 14 minutes East, 224.35 feet to the East line of Government Lot 8; thence South 00 degrees 10 minutes 39 seconds West, 475 feet to the South line of said section; thence South 89 degrees 42 minutes 10 seconds West, 1298.78 feet to the place of beginning.

Parcel 10:
That part of Government Lot 10, Section 21, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, lying Northerly of the Creek running in an Easterly and Westerly direction across said Lot. AND So much of Government Lot 10, Section 21, Township 14 North, Range 10 West, lying Southerly of the Creek running in an Easterly and Westerly direction across said Lot as lies below an elevation of 840 feet, United States Geological Survey Datum (mean tide at New York City), together with a strip of land 200 feet wide immediately above and adjacent to the line established by such elevation.

Parcel 11:
So much of the Southwest 1/4 of the Northwest 1/4, Section 22, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, as lies below an elevation of 840 feet, United States Geological Survey Datum (mean tide at New York City) together with a strip of land 200 feet wide immediately above and adjacent to the line established by such elevation.

Parcel 12:
Southwest 1/4 of the Northwest 1/4, also known as Government Lot 1, Section 28, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. AND Government Lots 2, 3 and 4, Section 28, Township 14 North, Range 10 West. AND The Southeast 1/4 of the Northwest 1/4, Section 28, Town 14 North, Range 10 West.

Parcel 13:
Government Lots 3, 7 and 8, Section 29, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 14:
Government Lot 5, Section 29, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM the West 40 rods of Government Lot 5 of Section 29, Township 14 North, Range 10 West.

Parcel 15:
The South 300 feet of the West 660 feet of the Southwest 1/4 of the Southwest 1/4 of Section 29, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 16:
That part of the Southeast 1/4 of the Southeast 1/4, Section 30, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, lying South and East of the angling highway which crosses said land near the Southeast corner thereof.

Parcel 17:
Government Lots 1, 2, 3, 4, 5, 6, 7, 8 and 9, and Northwest 1/4 of Southeast 1/4, Section 31, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. EXCEPTING THEREFROM the Northwest 1/4 of the Northwest 1/4 and that part of Government Lot 3, described as the West 1/2 of the Northeast 1/4 of the Northwest 1/4; and that part of Government Lot 4, described as: The Northwest 1/4 of the Southwest 1/4 of the Northwest 1/4, all in Section 31, Township 14 North, Range 10 West.

Parcel 18:
Government Lot 9, and the East 1/2 of the Southeast 1/4, Section 31, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 19:
All that part of Government Lot 3 of Section 32, Town 14 North, Range 10 West, lying Westerly of the West 1/8 line of said Section 32 of said Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, excepting therefrom that portion of said above- described land which maybe overflowed by the backwaters of Hardy Dam, so-called.

Parcel 20:
Lots 1, 2, 5 and 6, Section 6, Township 13 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. AND That part of Lots 3 and 4, Section 6, Township 13 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, situated in the Northwest 1/4 of said Section. EXCEPTING THEREFROM any part thereof which may lie within the South 40 acres of Government Lot 3 and the South 40 acres of Government Lot 4, all in Section 6, Town 13 North, Range 10 West.

Parcel 21:
Southwest 1/4 of the Northwest 1/4 and the Northwest 1/4 of the Southwest 1/4, Section 18, Township 13 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 22:
Southwest 1/4 of the Northwest 1/4, Section 19, Township 13 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. AND Northwest 1/4 of the Northwest 1/4 of Section 19, Township 13 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 23:
Northwest 1/4 of the Northwest 1/4 of Section 22, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. EXCEPTING THEREFROM the East 10 acres of the Northwest 1/4 of the Northwest 1/4 of Section 22, Township 14 North, Range 10 West.

Parcel 24:
Government Lot 6, Section 29, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, EXCEPTING THEREFROM the West 40 rods of Government Lot 6 of Section 29, Township 14 North, Range 10 West, EXCEPT a triangular parcel of land out of the Southeast corner thereof, described as: Beginning at the Southeast corner of said description; thence North 400 feet; thence Southeasterly in a straight line to a point on the South line of said Section which is 400 feet West of the place of beginning; thence East to the place of beginning.

Parcel 25:
Government Lot 8 and the Northwest 1/4 of the Southeast 1/4 lying Southerly and Easterly of Hardy Pond of Section 31, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan.

Parcel 26:
Government Lots 1, 2, 3 and 4, Section 32, Township 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan. AND Southwest 1/4 of the Northeast 1/4 of Section 32, Township 14 North, Range 10 West. AND East 1/2 of the Northeast 1/4, Section 32, Township 14 North, Range 10 West.

Parcel 27:
The South half of the Northwest quarter, and Government Lots 1, 2 3 and 4, Section 1, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 28:
Government Lots 5 and 6, Section 1, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, excepting therefrom The South 14 feet of the West 200 feet of the Northeast 1/4 of the Southeast 1/4; and the East 28 feet of the Southwest 1/4 of the Southeast 1/4, EXCEPT the South 408.85 feet thereof; all being a part of Section 1, Township 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 29:
Government Lots 1 and 2, Section 11, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 30:
Government Lots 6 and 7, Section 12, Town 13 North, Rang 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 31:
The East half of the Southeast quarter, and the Southwest quarter of the Northeast quarter, and Government Lots 1, 2, 3, 4 and 5 inclusive, Section 12, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 32:
That part of the Southwest quarter of the Southwest quarter, lying Southwesterly of Hardy Pond, Section 12, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 33:
That part of the West half, lying Westerly of Hardy Pond, Section 13, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 34:
The Southwest 1/4 of the Northeast 1/4, the Southwest 1/4 of the Northwest 1/4, the Northwest 1/4 of the Northwest 1/4, the Southeast 1/4 of the Northwest 1/4 and the West 1/2 of the Southwest 1/4, and Government Lots 1, 2, 3, 4, 5, 6, 7 and 8, all in Section 13, Township 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, EXCEPTING THEREFROM that part of the West 1/2 of said Section lying Westerly of Hardy Pond.

Parcel 35:
That part of the West half of the Southwest quarter, lying Southerly of the River, Section 14, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 36:
The South 1/2 of the Northwest 1/4, the East 1/2 of the Southwest 1/4, the Northwest 1/4 of the Southeast 1/4, and the South 1/2 of the Southeast 1/4, and a parcel of land 18 rods square in the Northwest corner of Government Lot 1, all in Section 14, Township 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 37:
That part of Section 15 North of the River, excepting therefrom, the North half of the Northwest quarter; also except Government Lot 4 Northerly of the pond and Westerly of the bayou; also except that part of the Northeast quarter of the Southeast quarter of the Northeast quarter Northerly of the river; also except the West half of the East half of the Northeast quarter Northerly and Easterly of the river except the North 850 feet thereof; also except the East 330 feet of the East half of the West half of the Northeast quarter lying Northerly and Easterly of the river, except the North 850 feet thereof, all in Township 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 38:
That part of the Northeast quarter of the Southeast quarter of the Northeast quarter Northerly of the river; also the West half of the East half of the Northeast quarter Northerly and Easterly of the river except the North 850 feet thereof; also the East 330 feet of the East half of the West half of the Northeast quarter lying Northerly and Easterly of the river, Section 15, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 39:
That part of Government Lot 4 Northerly of the pond and Westerly of the bayou, Section 15, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 40:

Government Lots 5 and 6, Section 15, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 41:
The Southeast quarter of the Northeast quarter; also, the Southeast quarter of the Southwest quarter; also, The Southwest quarter of the Southeast quarter; also the East half of the Southeast quarter, Section 16, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 42:
That part of the South half of the Southeast quarter, lying southerly of the Muskegon River, and Government Lot 5, all in Section 21, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 43:
The Northwest quarter of the Southeast quarter; and Government Lots 1, 2, 3 and 4, excepting therefrom, the West 660 feet of Government Lot 4, Section 21, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 44:
The West 660 feet of Government Lot 4, Section 21, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 45:
That part of the Northwest quarter of the Northwest quarter, lying North of the river; ALSO Government Lots 7 and 8, all in Section 22, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 46:
The Northeast quarter; ALSO the East half of the Northwest quarter, ALSO Government Lots 1, 2, 3, 4, 5 and 6 inclusive, Section 22, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, excepting therefrom A parcel of land located in the Northeast 1/4 of Section 22, Town 13 North, Range 11 West, being more particularly described as follows: The Southeast 1/4 of the Northeast 1/4 of said Section 22, excepting therefrom the following described parcel: To find the Place of Beginning, commence at the East 1/4 corner of said Section 22; thence North 89 degrees 40 minutes 26 seconds West along the East and West 1/4 line of said section, 1026.50 feet to the Place of Beginning; thence continuing North 89 degrees 40 minutes 26 seconds West along the East and West 1/4 line of said section, 300 feet to the East 1/8 line of said section; thence North 00 degrees 34 minutes 35 seconds East along the East 1/8 line of said section, 400 feet; thence South 89 degrees 40 minutes 26 seconds East, 300 feet; thence South 00 degrees 34 minutes 35 seconds West, 400 feet to the Place of Beginning. (Bearings are based on the East line of the Southeast 1/4 of said Section 22 assumed as North 00 degrees 17 minutes 11 seconds East).

Parcel 47:
Incomplete description: That part of Government Lots 4 and 5 and the South 400 feet of the West 300 feet of the Southwest quarter of the Northeast quarter, Section 22, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 48:
Government Lot 3, and that part of Government Lots 4, 5 and 6 lying below the waterline of Hardy Pond, all in Section 23, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 49:
That part of Government Lot 4, known as The Southeast quarter of the Northwest quarter, Section 23, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 50:
Government Lots 1 and 2, Section 23, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 51:
The Northeast quarter of the Southeast quarter and that part of Government Lots 4, 5 and 6 lying above the waterline of Hardy Pond, excepting therefrom all that part of Government Lot 4 known as the Southeast quarter of the Northwest quarter, Section 23, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 52:
The Southeast quarter of the Southwest quarter, and the South half of the Southeast quarter, Section 23, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 53:
That part of the Northwest quarter of the Northwest quarter lying Northerly of Hardy Pond, Section 24, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 54:
Government Lots 1 and 2, Section 24, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 55:
The East half of the Northeast quarter; the Southwest quarter of the Northeast quarter; the North half of the Southwest quarter; and Government Lots 3 and 4 except that part of the Northwest quarter o the Northwest quarter lying Northerly of Hardy Pond, all in Section 24, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 56:
Government Lot 3, Section 27, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 57:
Government Lot 1, Section 27, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 58:
The Northwest quarter of the Northeast quarter and Government Lot 2, Section 27, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 59:
The Northwest quarter of the Southwest quarter, Section 27, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 60:
The Southwest quarter of the Northwest quarter; and the Southeast quarter of the Northwest quarter; and Government Lot 5 except the Easterly 200 feet of that part of Government Lot 5 westerly of Hardy Pond, Section 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 61:
The Easterly 200 feet of that part of Government Lot 5 Westerly of Hardy Pond; and that part of Government Lot 6 Westerly of Hardy Pond, Section 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 62:
That part of the Northeast quarter of the Northeast quarter lying North and East of the river; and the Southeast quarter of the Southeast quarter; and Government Lots 1, 2 and 9, except that part lying South of Croton Hardy Road in Government Lot 2, all in Section 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 63:
Government Lots 3, 7 and 8, Section 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 64:
Government Lot 1, Section 29, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Parcel 65:
The North 10.01 acres of the Northeast quarter of the Northeast quarter, Section 33, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan.

Hodenpyl Project

2312-01-2101
The Northwest 1/4 of Section 1, Town 23 North, Range 12 West, EXCEPT the Southeast 1/4.

2312-02-1101
The Northeast 1/4 of Section 1, EXCEPT commencing at the intersection of the North line of Section 1 and the West line of the former Manistee & Northeastern Railroad Right of Way, thence West to west right of way line of Mesick Highway, thence South 224 feet, thence West 10 rods, thence South to North boundary former Railroad Right of Way, thence Northeasterly along Railroad Right of Way to point of beginning and EXCEPT the West 1/2 of the Northeast 1/4 lying North of Manistee & Northeastern Railroad Right of Way and commencing South 52 degrees 43' West 1458 feet from the intersection of the Southerly Right of Way line of former Manistee & Northeastern Railroad Right of Way and the Westerly line of Mesick Highway, thence South 37 degrees 17' East 1205.5 feet, thence Westly to the North/South 1/4 line, thence North to Southerly Right of Way, thence Northeasterly along Railroad Right of Way to point of beginning. ALSO East 3/4 of the South 1/2 of Section 2, Town 23 North, Range 12 West, EXCEPT AA Railroad Right of Way.

2312-09-4401
The Southeast 1/4 of the Southeast 1/4 of Section 9, Town 23 North, Range 12 West.

2312-10-1201
The West 1/2 of the Northeast 1/4; the South 1/2 of the Southeast 1/4 of the Northeast 1/4; the Southeast 1/4 EXCEPT the Northwest 1/4 of the Southeast 1/4 lying Northerly and Westerly of the Hodenpyl Dam Pond; the Southwest 1/4 of the Southwest 1/4; and the East 1/2 of the Southwest 1/4 lying Southerly of the former Manistee and Northeastern Railroad right of way, all in Section 10, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-10-4201
The Northwest 1/4 of the Southeast 1/4 lying Northerly and Westerly of the Hodenpyl Dam Pond, Section 10, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-11-2101
The Southeast quarter (SE1/4) of the Southwest quarter (SW1/4) of Section eleven (11), Township twenty-three (23) North, Range twelve (12) West. AND The Southwest quarter (SW1/4) of the Northwest quarter (NW1/4) and Northwest quarter (NW1/4) of Southwest quarter (SW1/4) of Section eleven (11), all in Township twenty-three (23) North, Range twelve (12) West. AND The East half (E1/2) of the Northwest quarter (NW1/4) and the Northeast quarter (NE1/4) of the Southwest quarter (SW1/4) of Section eleven (11) and that part of the Northwest quarter (NW1/4) of the Northwest quarter (NW1/4) of Section eleven (11) lying East of Manistee River, all in Township Twenty-three (23) North, Range twelve (12) West. AND the North half (N1/2) of the Northwest quarter (NW1/4), West of Manistee River except Railroad Right of Way; Southwest quarter (SW1/4) of Southwest quarter (SW1/4), and a parcel of land two hundred (200) feet East and West by four hundred fifty (450) feet North and South situated in Southwest corner of Southwest quarter (SW1/4) of Northeast quarter (NE1/4), all in Section eleven (11), Township twenty-three (23) North, Range twelve (12) West. LESS AND EXCEPT: That part of the West thirty (30) rods of the Northwest quarter (NW1/4) of the Northwest quarter (NW1/4) of Section eleven (11), Township twenty-three (23) North, Range twelve (12) West, lying Southerly of the Ann Arbor Railroad right of way. LESS AND EXCEPT: That part of the Southwest one-quarter (SE1/4) of the Southwest one-quarter (SW1/4) of Section eleven (11), Township twenty-three (23) North, Range twelve (12) West, lying Southeasterly of the Ann Arbor Railroad right of way. LESS AND EXCEPT: That part of Southeast quarter (SE1/4) of Northwest quarter (NW1/4) lying Northerly of Hodenpyl Dam Pond EXCEPT the East 300 feet thereof.

2312-11-2401
That part of Southeast quarter (SE1/4) of Northwest quarter (NW1/4) lying Northerly of Hodenpyl Dam Pond EXCEPT the East 300 feet thereof.

2312-15-1201
Part of Section 15, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, described as: The West 3/4 of the North 1/2, EXCEPT the South 4 rods of the Southwest 1/4 of the Northeast 1/4; the East 510 feet of the North 520 feet of the Southwest 1/4; the West 466.5 feet of the North 466.5 feet of the Southwest 1/4; and commencing at the Northwest corner of the Southeast 1/4, thence East 840 feet; thence South 39 degrees West 265 feet; thence South 71 degrees 30 minutes West 710 feet to the 1/4 line; thence North 420 feet to the point of beginning.

2312-16-1101
All of Section 16, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, EXCEPT Mesick RV Park Campground, also EXCEPT the West 1/2 of the Northwest 1/4, also EXCEPT the Northeast 1/4 of the Northwest 1/4.

2312-16-3101
Part of Section 16, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, described as follows: The Southeasterly 300 feet of the Northeast 1/4 of the Southwest 1/4 lying Northwesterly of the Hodenpyl Impoundment; also that part of the Southeast 1/4 of the Southwest 1/4 lying Northwesterly of the Hodenpyl Impoundment; also the South 3/4 of the Southwest 1/4 of the Southwest 1/4 below contour 819.7 feet and Northerly of road. ALSO, ingress and egress rights on over and across the abandoned roadway formerly known as Manistee River Drive, leading Southerly and Northeasterly from # 3 1/2 Road in Section 20, to Hodenpyl Dam Road, also called Beers Road, also called Mesick-Marilla Road, in Section 16.

2312-17-4301
The South 1/2 of the Southeast 1/4 of Section 17, Town 23 North, Range 12 West, Except Trailer Park.

2312-17-4401
The Southerly 200 feet of the South 1/2 of the Southeast 1/4 lying Northerly of Hodenpyl Pond, Section 17, Town 23 North, Range 12 West.

2312-19-1301
The entire Section lying South of County Road, except the North 1/2 of the Northeast 1/4 and Except the North 1/2 of the Northwest 1/ 4 and Except that part of the Southeast 1/ 4 of the Northwest 1/ 4 lying Northwesterly of County Road right of way and Except Trailor Park, Section 19, Town 23 North, Range 12 West.

2312-19-2401
All of the following lying Northerly of Hodenpyl pond, South 1/2 of Southeast 1/4, South 1/2 of South 1/2 of Northeast 1/4, South 1/2 of Southeast 1/4 of Northwest 1/4 of Section 19, Town 23 North, Range 12 West.

2312-20-1101

The entire Northeast quarter (NE1/4); East half (E1/2) of Northwest quarter (NW1/4); Southwest quarter (SW1/4) of Northwest quarter (NW1/4); entire Southwest quarter (SW1/4); and Northwest quarter (NW1/4) of Southeast quarter (SE1/4). Also the Northeast quarter (NE1/4) of Southeast quarter (SE1/4); Southwest quarter (SW1/4) of Southeast quarter (SE1/4) and Southeast quarter (SE1/4) of Southeast quarter (SE1/4), all in Section twenty (20), Township twenty-three (23) North, Range twelve (12) West. LESS AND EXCEPT: Southerly 200 feet of the North 1/2 of the Northeast 1/4 and the East 1/2 of the Northeast 1/4 of the Northwest 1/4 lying Northerly of Hodenpyl Pond in Section 20, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-20-1102
Southerly 200 feet of the North 1/2 of the Northeast 1/4 and the East 1/2 of the Northeast 1/4 of the Northwest 1/4 lying Northerly of Hodenpyl Pond in Section 20, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-21-1201
The entire Northwest quarter (NW1/4); Northwest quarter (NW1/4) of Southwest quarter (SW1/4); South half (S1/2) of Southwest quarter (SW1/4) and Southwest quarter (SW1/4) of Southeast quarter (SE1/4), and West half (W1/2) of Northeast quarter (NE1/4) and Northeast quarter (NE1/4) of Southwest quarter (SW1/4), all in Section twenty-one (21), Township twenty-three (23) North, Range twelve (12) West.
LESS AND EXCEPT: The Southeast 1/4 of the Southwest 1/4 and the Southwest 1/4 of the Southeast 1/4 of Section 21, Town 23 North, Range 12 West. LESS AND EXCEPT AN EASEMENT TO THE STATE OF MICHIGAN: A parcel of land in the Northwest 1/4 of the Southeast 1/4 of Section 21, Town 23 North, Range 12 West, described as follows: To find the place of beginning of this description commence at the South 1/4 post of said section; thence South 89 degrees 36 minutes 45 seconds East along the South line of said section 783.30 feet to the survey center line of Highway M-37; thence North 11 degrees 54 minutes 30 seconds West along the survey center line of Highway M-37 a distance of 419.31 feet to the point of curve at Station 796 57.63 of said highway; thence Northerly along the survey center line of Highway M-37 on a 1 degree 30 minutes curve to the right to a point on the curve at Station 813 55; thence Westerly on a perpendicular to the tangent of said Station 813 55, 150.00 feet to the Westerly right of way line of Highway M-37 and the place of beginning of this description; running thence Northerly along the Westerly right of way line of said highway 300.00 feet; thence Westerly on a perpendicular to the tangent of the last aforementioned point 100.00 feet; thence Southerly parallel to and 100.00 feet distant from the Westerly right of way line of said highway to a point 100.00 feet Westerly of and measured perpendicular to the tangent of the place of beginning; thence Easterly 100.00 feet to the place of beginning.
2312-21-2201
Northwest 1/4 of the Northwest 1/4 lying Northerly of the Hodenpyl Dam Pond, Section 21, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-29-1101
The North 1/2 of the North 1/2 of Section 29, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, EXCEPT the Northeast 1/4 of the Northeast 1/4 of Section 29, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312-30-1101
The Northeast 1/4 of the Northeast 1/4; the South 1/4 of the Northwest 1/4 of the Northeast 1/4; the Southwest 1/4 of the Northeast 1/4 lying North of Tar Creek; the Northeast 1/4 of the Northwest 1/4; the West 1/2 of the Northwest 1/4, EXCEPT, Commencing 55 feet North and 192.4 feet East of the West 1/4

post; thence East 170 feet; thence North 03 degrees 07 minutes 10 seconds West 316 feet; thence North 76 degrees 57 minutes 10 seconds West 177.05 feet; thence North 53 degrees 44 minutes 30 seconds West 165.41 feet; thence South 86 degrees 52 minutes 50 seconds West 54.65 feet; thence South 252.54 feet; thence South 14 degrees 04 minutes 40 seconds East 153.83 feet; thence South 46 degrees 21 minutes 40 seconds East 91.46 feet; thence East to the Point of Beginning; and the Northwest 1/4 of the Southwest 1/4, all in Section 30, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan.

2312M-111302
A parcel of land two hundred (200) feet East and West by four hundred fifty (450) feet North and South situated in Southwest corner of Southwest quarter (SW1/4) of Northeast quarter (NE1/4) in Section eleven (11), Township twenty-three (23) North, Range twelve (12) West.

2312M-114201
That part of the Southwest quarter (SW1/4) of the Southeast quarter (SE1/4) of Section eleven (11) lying North and West of the Ann Arbor Railroad in Township twenty-three (23) North, Range twelve (12) West. AND Northwest quarter (NW1/4) of Southeast quarter (SE1/4) of Section eleven (11), Township twenty-three (23) North, Range twelve (12) West, EXCEPT the Ann Arbor Railroad right of way across said premises.

2412-36-2301
The South Half (S 1/2) of the Northwest Quarter (NW 1/4) of Section thirty-six (36), Township twenty-four (24), Range twelve (12) West. LESS and EXCEPT: A parcel of land located in the Southeast 1/4 of the Northwest 1/4 of Section 36, Town 24 North, Range 12 West, described as: Commencing at the West 1/4 corner of said Section; thence North 87°46'22" East, 1896.34 feet along the East and West 1/4 line of said Section to the point of beginning of this description; thence continuing North 87°46'22" East, 212.00 feet to a survey iron on the Westerly bank of the Manistee River; thence due North 45 feet; thence Westerly along a line measured 45 feet North of and parallel to the East and West 1/4 line, 212.00 feet; thence South 45 feet to the point of beginning.

2412-36-3302
The East 1/4 of the Southwest 1/4 of the Southwest 1/4; the Southeast 1/4 of the Southwest 1/4; all that part of the Southwest 1/4 of the Southeast 1/4 lying West of the Manistee River; that part of the Northwest 1/4 of the Southeast 1/4 lying South of the Manistee River; the North 96 feet of that part of the South 1/2 of the Southeast 1/4 East of the Manistee River; and commencing at the Southwest corner of Section, North 20°30' East 100 feet, East 200 feet, South 100 feet to the South line of Section, West to the beginning. Portions of this subject property are land locked.

2412-VG-001
The West 3/4 of the Southwest 1/4 of the Southwest 1/4 of Section 36, Township 24 North, Range 12 West, EXCEPT Lots 7, 8, 40, 44, 45, 46, 47, 51, 69, 70, 71, 72 and 98 of the recorded plat of the Village of Glengarry; Subject to the right of way reserved by the Manistee & Northeastern Railroad Company in deeds recorded in Liber 2 of Misc., page 141 and Liber 49, page 451 and the right of way and depot grounds conveyed to the Ann Arbor Railroad Company by deed in Liber 65, page 13. LESS AND EXCEPT: That part of the Southwest 1/4 of the Southwest 1/4 of Section 36, Township 24 North, Range 12 West lying Westerly of the right of way of the former Manistee and Northeastern Railroad. ALSO LESS AND EXCEPT: Lot No. 97 of the recorded plat of the Village of Glengarry, Section 36, Town 24 North, Range

12 West. AND Including: Lot No. 40 of the recorded plat of the Village of Glengarry, Section 36, Town 24 North, Range 12 West.

2412-VS-0103
South 1/2 of the Southeast 1/4 of Section 36, Township 24, Range 12 West, EXCEPT that part lying West of the Manistee River and EXCEPT Lot 1, the North 1/2 of Lot 2, Lots 4, 6, 7 and 8 in Block One (1), of the Village of Sherman, as shown by the recorded plat thereof and EXCEPT Court House Square of the Village of Sherman, and EXCEPT Lot 1, Block Two (2), of the Village of Sherman.

09-024-375-01
The Southeast 1/4 of Section 24, Township 23 North, Range 13 West, EXCEPT the Northwest 1/4 of the Southeast 1/4. ALSO 25 acres in Southwest 1/4 East of Manistee and Northeastern Railroad Right Way.

09-025-100-01
The Northeast 1/4 of Section 25, Township 23 North, Range 13 West, EXCEPT the Southwest 1/4 of the Northeast 1/4, ALSO EXCEPT commencing at the East 1/4 corner, thence North 272.70 feet for a point of beginning, thence North 252.54 feet; thence South 86 degrees 52 minutes 50 seconds West 54.09 feet; thence South 14 degrees 4 minutes 40 seconds East 257.17 feet to the point of beginning. Also the Northeast 1/4 of the Northwest 1/4.

Loud Project

060-021-200-001-00
256 acres in the Northwest 1/4 of Section 21, Town 24 North, Range 6 East, EXCEPT commencing on the North and South line 1305.97 feet North of center of section; thence South 50 degrees 25 minutes 45 seconds West 365.4 feet; thence North 39 degrees 34 minutes 15 seconds West 181 feet; thence North 46 degrees 8 minutes 20 seconds East 160.44 feet; thence North 39 degrees 48 minutes 30 seconds East 162.79 feet; thence North 39 degrees 31 minutes East 142.58 feet; thence South 39 degrees 34 minutes 15 seconds East to North and South line; thence South to Point of Beginning. Also Northeast 1/4 except Southwest 1/4 of Northeast 1/4 and section commencing on the North and South 1/4 line 1305.97 feet North of center of section; thence North 50 degrees 25 minutes 45 seconds East 94.6 feet; thence North 39 degrees 34 minutes 15 seconds West to North and South 1/4 line; thence South to Point of Beginning except part of East 1/2 of Northeast 1/4 lying Northerly and Easterly of center thread of Ausable River.

060-019-200-001-00
Land in the South 1/2 of the Southwest 1/4 of the Southwest 1/4 of the Southeast 1/4, Town 24 North, Range 6 East, Section 19.

Mio Project

Parcel 1:
The South 1/2 of the Southwest 1/4, Section 2, Township 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan. EXCEPT that certain parcel of land located within the Southeast 1/4 of the Southwest 1/4 of Section 2, Township 26 North, Range 2 East, bounded by a line beginning at a point on the North and South 1/4 line along the East boundary of said 40 acre tract 400 feet South of the Northeast corner of said 40 acre tract; thence running North 89 degrees 41 minutes West parallel with the North boundary of said 40 acre tract to the Shore of Mio Pond; thence Southeasterly and Easterly along the shore

of Mio Pond to the intersection of the shore of Mio Pond with the 1/4 line along the East boundary of said 40 acre tract; thence North along said 1/4 line 375 feet to the point of beginning. FURTHER EXCEPT That part of the South 1/2 of the Southwest 1/4 of said Section, lying Southerly of the center thread of the Au Sable River, and also the portion of the island located in the Southwest 1/4 of the Southwest 1/4 of said Section 2 which lies Northerly of said center thread.

Parcel 2:
A parcel of land in the Township of Big Creek, Oscoda County, Michigan, described as: The West 250 feet of the South 57 rods of the Northwest 1/4 of Section 3, Town 26 North, Range 2 East. AND A parcel of land in the Township of Big Creek, Oscoda County, Michigan, described as: The West 250 feet of the Southwest 1/4 of the Northwest 1/4 of Section 3, Town 26 North, Range 2 East, EXCEPTING therefrom the South 57 rods thereof. AND A parcel of land in the Township of Big Creek, Oscoda County, Michigan, described as: The West 384 feet of the Northwest 1/4 of the Northwest 1/4 of Section 3, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan. AND The East 80 feet of the West 330 feet of the Southwest 1/4 of the Northwest 1/4, Section 3, Town 26 North, Range 2 East.

Parcel 3:
The West 1/2 of the Southwest 1/4; That part of the Southeast 1/4 of the Northwest 1/4 covered in the backwaters of Mio Pond; That part of the Southwest 1/4 of the Northeast 1/4, lying Southerly and Westerly of the highway; the Northwest 1/4 of the Southeast 1/4; the Southwest 1/4 of the Southeast 1/4; and the Southeast 1/4 of the Southeast 1/4, Section 3, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, excepting therefrom, All that part of the Southwest 1/4 of the Southeast 1/4 of Section 3, Town 26 North, Range 2 East, lying Easterly of the Au Sable River and Northerly and Westerly of the county highway. ALSO excepting that part of the East 1/2 of the Southwest 1/4 and West 1/2 of the Southeast 1/4 of said Section 3, all lying Southerly of the center thread of the Au Sable River; and any islands located within Section 3 which lie Northerly of said center thread; EXCEPT a strip of land 330 feet wide across the West 1/2 of Section 11, the Northeast 1/4 of the Northeast 1/4 of the Northwest 1/4 of Section 10 and the Southwest 1/4 of Section 3, Town 26 North, Range 2 East, the Easterly and Northeasterly line of said strip being 115 feet Easterly and 115 feet Northeasterly of the survey center line of an existing transmission line, described as follows: To find the place of beginning of this description, commence at the Southwest corner of said Section 11, run thence North 89 degrees 58 minutes East along the South line of said Section 1547.80 feet to the survey center line of an existing transmission line and the place of beginning of this description; thence North 00 degrees 20 minutes 54 seconds West along said survey center line 2239 feet; thence North 63 degrees 40 minutes 54 seconds West along said center line 4574 feet; thence North 43 degrees 59 minutes 54 seconds West along said centerline approximately 2537 feet to the Southerly bank of Mio Pond on the Au Sable River; thence continuing North 43 degrees 59 minutes 54 seconds West along said center line to the center thread of said river and the place of ending of this description; and FURTHER EXCEPTING that portion of said Section 3 lying Southwesterly of the previously described fee exception.

Parcel 4:
All that part of the Southwest 1/4 of the Southeast 1/4 of Section 3, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, lying Easterly of the Au Sable River and Northerly and Westerly of the county highway.

Parcel 5:
The East 80 feet of the Southeast 1/4 of the Northeast 1/4 of Section 4, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan.

Parcel 6:
The South 1/2 of Section 4, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, excepting therefrom that part of the South 1/2 of said Section 4, lying Southerly of the center thread of the Au Sable River, and also any islands located Northerly of the center thread of the Au Sable River within said Section 4.

Parcel 7:
The West 1/2 of the Northeast 1/4, Section 5, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan. AND The Northeast 1/4 of the Southeast 1/4, Section 5, Town 26 North, Range 2 East, excepting therefrom, that part of the Northeast 1/4 of the Southeast 1/4, lying South and Westerly of the center thread of the Au Sable River. AND The Southeast 1/4 of the Northeast 1/4, Section 5, Town 26 North, Range 2 East. AND The Northwest 1/4 of the Southeast 1/4, Section 5, Town 26 North, Range 2 East.

Parcel 8:
Entire Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4, Section 10, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, EXCEPT that part of the Northeast 1/4 of the Northwest 1/4 and the Northeast 1/4 of said Section 10, all lying Southerly of the center thread of the Au Sable River; and also any island or portions of islands located in the Northeast 1/4 of said section which lie Northerly of said center thread; EXCEPT a strip of land 330 feet wide across the West 1/2 of Section 11, the Northeast ¼ and the Northeast 1/4 of the Northwest 1/4 of Section 10 and the Southwest 1/4 of Section 3, Town 26 North, Range 2 East, the Easterly and Northeasterly line of said strip being 115 feet Easterly and 115 feet Northeasterly of the survey center line of an existing transmission line, described as follows: To find the place of beginning of this description, commence and the Southwest corner of said Section 11, run thence North 89 degrees 58 minutes East along the South line of said Section 1547.80 feet to the survey center line of an existing transmission line and the place of beginning of this description; thence North 00 degrees 20 minutes 54 seconds West along said survey center line 2239 feet; thence North 63 degrees 40 minutes 54 seconds West along said center line 4574 feet; thence North 43 degrees 59 minutes 54 seconds West along said center line approximately 2537 feet to the Southerly bank of Mio Pond on the Au Sable River; thence continuing North 43 degrees 59 minutes 54 seconds West along said center line to the center thread of said river and the place of ending of this description; and further excepting that portion of the Northeast 1/4 of the Northwest 1/4 of Section 10, lying Southwesterly of the previously described fee exception.

Parcel 9:
Entire Section 11, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, Except the South 30 acres of the Southwest 1/4 of the Southwest 1/4 thereof; EXCEPT that part of the West 1/2 of said Section 11, lying Southerly of the center thread of the Au Sable River; and also any islands or portions of islands located in the West 1/2 of said Section 11, which lie Northerly of said center thread; EXCEPTING from this description the South 30 acres of the Southwest 1/4 of the Southwest 1/4 of said Section 11, and also EXCEPTING a strip of land 330 feet wide across the West 1/2 of Section 11, the Northeast 1/4 and the Northeast 1/4 of the Northwest 1/4 of Section 10 and the Southwest 1/4 of Section 3, Town 26 North, Range

2 East, the Easterly and Northeasterly line of said strip being 115 feet Easterly and 115 feet Northeasterly of the survey center line of an existing transmission line, described as follows: To find the place of beginning of this description, commence at the Southwest corner of said Section 11, run thence North 89 degrees 58 minutes East along the South line of said Section 1547.80 feet to the survey center line of an existing transmission line and the place of beginning of this description; thence North 00 degrees 20 minutes 54 seconds West along said survey center line 2239 feet; thence North 63 degrees 40 minutes 54 seconds West along said centerline 4574 feet; thence North 43 degrees 59 minutes 54 seconds West along said center line approximately 2537 feet to the Southerly bank of Mio Pond on the Au Sable River; thence continuing North 43 degrees 59 minutes 54 seconds West along said center line to the center thread of said river and the place of ending of this description.

Parcel 10:
The Southeast 1/4 of the Northeast 1/4, and the Northeast 1/4 of the Southeast 1/4, Section 12, Town 26 North, Range 2 East, Except 1 square acre in the Southeast corner thereof. Also except any part thereof in the Original Plat of the Village of Mio, ALSO EXCEPT A parcel of land in the Northeast 1/4 of the Southeast 1/4 of Section 12, Township 26 North, Range 2 East, described as: Beginning at a point 2043.68 feet North of the Southeast corner of said Section 12; running thence West 200 feet; thence North 100 feet; thence East 200 feet; thence South 100 feet to the place of beginning. ALSO EXCEPT A piece of parcel of land in the Northeast 1/4 of the Southeast 1/4 of Section 12, Township 26 North, Range 2 East, described as follows: To find the point of beginning of this description, begin at the Southeast corner of said Section, run thence North along the East line of said Section 2043.68 feet to the Southeast corner of a parcel of land previously conveyed by Consumers Power Company to Fred M. Avery and wife, Hortense R., by a deed dated November 28, 1950; thence West along the South line of said land previously conveyed to Avery 200 feet to the Southwest corner of said land previously conveyed to Avery and the place of beginning of this description; running thence West 160 feet; thence North 100 feet; thence East 160 feet to the Northwest corner of said land previously conveyed to Avery; thence South along the West line of said land previously conveyed to Avery 100 feet to the place of beginning. ALSO EXCEPT All that part of the following described Tract "A" which lies Easterly of the proposed Westerly right of way line of Highway M-33/M-72. Tract "A" - The Northeast 1/4 of the Southeast 1/4 of Section 12, Town 26 North, Range 2 East, Big Creek Township, EXCEPTING THEREFROM entire Block 6 of the Plat of the Village of Mio, according to the plat thereof, as recorded in Liber 1 of Plats, Page 1 of Oscoda County Records. Said parcel does include Blocks 1, 2, 3, 4 and 5 of said Plat of the Village of Mio. ALSO EXCEPTING THEREFROM a parcel of land described as: Beginning at a point 2043.6 feet North of the Southeast corner of said Section; thence running West 360 feet; thence North 100 feet; thence East 360 feet; thence South 100 feet to the point of beginning. The proposed Westerly right of way line of Highway M-33/M-72 is described as: To find the place of beginning of said Westerly right of way line commence at the Southeast corner of Section 7, Town 26 North, Range 3 East, Mentor Township; thence North 89 degrees 51 minutes 58 seconds East along the South line of said Section 1.79 feet; thence North 00 degrees 11 minutes 54 seconds West 1600.00 feet to the point of beginning of said Westerly right of way line; thence South 89 degrees 48 minutes 06 seconds West 100.00 feet; thence North 00 degrees 11 minutes 54 seconds West 54.10 feet to the point of curvature of a 2391.83 foot radius curve to the right; thence Northerly along the arc of said curve 450 feet to the point of ending. ALSO EXCEPT A parcel of land in the Village of Mio, being part of the Northeast 1/4 of the Southeast 1/4 of Section 12, Town 23 North, Range 2 East, being more particularly described as: To find the place of beginning of this description commence at the Southeast corner of said Section 12;

thence North 00 degrees 11 minutes 04 seconds West 1335.87 feet along the East line of said Section to the intersection of the centerline of vacated 4th Street and the East line of said Section; thence South 89 degrees 59 minutes 50 seconds West 312.84 feet along said centerline of 4th Street to the East line of Deyarmond Street and the point of beginning of this description; thence continuing South 89 degrees 59 minutes 50 seconds West 66.00 feet along said vacated 4th Street centerline to the West line of Deyarmond Street as in the recorded Plat of the Village of Mio; thence North 00 degrees 12 minutes 48 seconds West 296.75 feet along said West line of Deyarmond Street to the Northeast corner of Block 5 and the South line of 3rd Street of said plat; thence North 89 degrees 47 minutes 01 seconds East 96.00 feet along the South line of said 3rd Street to the Northwest corner of Block 6 of said plat; thence South 00 degrees 12 minutes 48 seconds East 297.00 feet to the point of beginning.

Parcel 11:
All that part of The Northwest 1/4 and the West 1/2 of the Northeast 1/4, lying Northerly of the Mio Pond, Section 12, Town 26 North, Range 2 East, excepting therefrom, that part of the Southwest 1/4 of the Northwest 1/4 lying Westerly of the pond. Also except the Northwest 1/4 of the Northeast 1/4, thereof.

Parcel 12:
All that part of the North 1/2 of the Southwest 1/4 and the Southwest 1/4 of the Southwest 1/4, Town 26 North, Range 2 East, Section 12, EXCEPT that part of the East 1/2 thereof, Southeasterly of a line 150 feet Southeasterly, Beginning 160 feet North of the Southwest corner; thence Northeasterly to the South 1/8 line and the Northwest 1/4 of the Southeast 1/4, EXCEPT land beginning on the North-South 1/4 line at the South 1/8 line; thence East 264 feet; thence North 100 feet; thence Westerly 140 feet North of the point of beginning; thence continuing Westerly 31 feet, Southerly to a point 52 feet West and 120 feet South of the point of beginning; thence Easterly 52 feet; thence North 120 feet to the point of beginning. (County Park Site) Also West and 120 feet South of point of beginning; thence East 52 feet; thence North 120 feet to the point of beginning. (City Park Site)

Parcel 13:
The East 12 rods of the Northeast 1/4 of Section 14, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, EXCEPT the East 66.00 feet of the following described "Tract A". ALSO EXCEPT that part of the following described "Tract A" lying Easterly and Southeasterly of the following described line: Beginning at a point on the East-West 1/4 line of Section 14, Town 26 North, Range 2 East, that is West 198 feet from the East 1/4 corner of said Section 14; thence North 33.00 feet; thence North 48 degrees 01 minutes 58 seconds East 300 feet to the point of ending, EXCEPTING that part hereinbefore described. The East 12 rods of the Northeast 1/4 of Section 14, Town 26 North, Range 2 East. AND The West 430 feet of the Southeast 1/4 of the Southwest 1/4 of Section 14, Town 26 North, Range 2 East. AND A triangular parcel of land in the Southeast corner of the Southwest 1/4 of the Southwest 1/4 of Section 14, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, described as follows: To find the place of beginning of this description, commence at the Southwest corner of said Section; run thence North 89 degrees 46 minutes 30 seconds East along the South line of said Section 1324.38 feet to the place of beginning of this description; thence continuing North 89 degrees 46 minutes 30 seconds East along said South line of said Section 4.87 feet to the West 1/8 line of said Section; thence North 00 degrees 17 minutes 24 seconds West along said West 1/8 line of said Section 32.02 feet; thence South 08 degrees 21 minutes 19 seconds West 32.38 feet to the place of beginning. AND A parcel of land in the Township of

Big Creek, described as: The West 30 rods of the Northeast 1/4 of the Southwest 1/4 of Section 14, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, EXCEPT the North 200 feet of the East 100 feet, said land being more particularly described as follows: To find the place of beginning of this description, commence at the West 1/4 post of said section; run thence North 89 degrees 59 minutes 50 seconds East along the East and West 1/4 line of said Section 1329.72 feet to the West 1/8 line of said Section and the place of beginning of this description; thence continuing North 89 degrees 59 minutes 50 seconds East along said East and West 1/4 line of said Section 395.01 feet; thence South 00 degrees 17 minutes 24 seconds East 200 feet; thence North 89 degrees 59 minutes 50 seconds East 100 feet to the East line of the West 30 rods of the Northeast 1/4 of the Southwest 1/4 of said Section; thence South 00 degrees 17 minutes 24 seconds East along said East line of the West 30 rods of the Northeast 1/4 of the Southwest 1/4 of said Section 1091.4 feet to the South 1/8 line of said Section; thence South 89 degrees 53 minutes 10 seconds West along said 1/8 line of said Section 495 feet to the West 1/8 line of said Section; thence North 00 degrees 17 minutes 24 seconds West along said West 1/8 line of said Section 1292.36 feet to the place of beginning. AND The West 430 feet of the East 1/2 of the Northwest 1/4 of Section 14, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan.

Parcel 14:
A parcel of land in the Township of Mentor, Oscoda County, Michigan, described as: The Southwest 1/4 of the Northwest 1/4 of Section 7, Township 26 North, Range 3 East, lying North of the Au Sable River and West of the Westerly line of Highway M-33/M-72.

Rogers Project

Parcel 1:
Beginning at the West 1/4 corner of Section 1, Township 14 North, Range 10 West; thence North 223 feet; thence East to river; thence Southwesterly along river to the West section line; thence North 77 feet to the point of beginning.

Parcel 2:
The South 223 feet of the East 174 feet of the Northeast 1/4 of Section 2, Township 14 North, Range 10 West. EXCEPT the plat of Riverside Gardens, according to the recorded plat thereof, Mecosta County Records.

Parcel 3A:
The Northeast 1/4 of the Southeast 1/4, lying East of US 131, Section 10, Township 14 North, Range 10 West.

Parcel 3B:
The Southeast 1/4 of the Northeast 1/4, lying East of US 131, Section 10, Township 14 North, Range 10 West.

Parcel 4:
The West 40 acres of Government Lot 3, Section 11, Township 14 North, Range 10 West, EXCEPT Miller Dale Plat, according to the recorded plat thereof, Mecosta County Records. ALSO Government Lot 4, Section 11, Township 14 North, Range 10 West.

Parcel 5:
Government Lot 5 and Government Lot 11, lying East of State Road, Section 11, Township 14 North, Range 10 West.

Parcel 6A:
Government Lot 1, Section 14, Township 14 North, Range 10 West. ALSO Government Lot 2 West of Old State Road, Section 14, Township 14 North, Range 10 West. ALSO that part of Government Lot 2 lying between U.S. 131 and the old original Grand Rapids and Big Rapids and Big Rapids State Road as follows: Beginning at a point 50 feet West of center line of South abutment of bridge over Muskegon River on U.S. 131 known as Bridge File BR. one of fifty four-Twelve-One F.A. 132; thence 130 feet West along river bank to center line of old original Grand Rapids and Big Rapids State Road; 290 feet in a Southeasterly direction on center of original Grand Rapids and Big Rapids State Road to intersection with West side of U.S. 131 one F.A. 132; thence 230 feet North along West side of U.S. 131 to beginning, Section 14, Township 14 North, Range 10 West. EXCEPTING THEREFROM: A triangular parcel in the Northwest 1/4 of the Southwest 1/4 lying Westerly of U.S. 131 and Easterly of County Road running in Northwesterly and Southeasterly direction across the Northwest 1/4 of the Southwest 1/4 and being bounded on the North by East and West 1/4 line.

Parcel 6B:
A parcel of land 16 rods North and South by 10 rods East and West in the Southwest corner of the Southwest 1/4 of Northeast 1/4 of Section 14, Township 14 North, Range 10 West.

Parcel 7:
That part of Government Lot 2 lying between U.S. 131 and the old original Grand Rapids and Big Rapids and Big Rapids State Road as follows: Beginning at a point 50 feet West of center line of South abutment of bridge over Muskegon River on U.S. 131; thence 130 feet West along river bank to center line of old original Grand Rapids and Big Rapids State Road; thence South 14 degrees 40 minutes 47 seconds West 103.33 feet; thence South 33 degrees 35 minutes 48 seconds East 185.86 feet to West side of U.S. 131; thence North 12 degrees 30 minutes East 230 feet on U.S. 131 to point of beginning.

Parcel 8:
Government Lot 3, Section 14, Township 14 North, Range 10 West. EXCEPT Beginning at Northwest corner; thence East 695 feet; thence South 27 degrees 04 minutes East 207.15 feet; thence Southeasterly along highway on a 03 degree 51 minute 50 second curve 308.20 feet to point of beginning; thence continuing Southeasterly 255 feet; thence South 89 degrees 33 minutes East 250 feet; thence North 08 degrees 20 minutes West 126.21 feet; thence North 13 degrees 23 minutes West 128.7 feet; thence North 89 degrees 33 minutes West 250 feet to point of beginning. ALSO EXCEPT Beginning at Northwest section corner; thence South 74 feet; thence North 88 degrees 51 seconds East to highway; thence Northwesterly

to North section line; thence South 88 degrees 51 seconds West 623.79 feet to point of beginning. ALSO EXCEPT that part conveyed by deeds recorded in Liber 280, Page 174 and Liber 284, Page 490.

Parcel 9:
Lot 17, Riverside Gardens, according to the recorded plat thereof, Mecosta County Records.

Tippy Project

Parcel 1:
A parcel assessed for tax purposes as:
Entire Section 31, Town 22 North, Range 13 West, EXCEPT, Government Lots 1, 2, 3 and 4, but not including dam spillway and power facilities. ALSO EXCEPT, in the North 1/2 of the Northwest 1/4 lying South of the South line of Tower Road extended Westerly to Dilling Road and also that part West of Dilling Road, also except North 1/2 of Northeast 1/4. ALSO EXCEPT, commencing at the Southwest corner of said Section for Point of Beginning, thence South 88 degrees 19 minutes 08 seconds East 1451.25 feet to West 1/8 line, thence North 184.17 feet, thence North 88 degrees 19 minutes 08 seconds West 1449.28 feet, thence South 184.10 feet to Point of Beginning. ALSO EXCEPT, commencing 1330.39 feet North of Southwest corner of said Section for Point of Beginning, thence continuing North 450.34 feet, thence South 88 degrees 11 minutes 08 seconds East 67.07 feet, thence South 339.90 feet to centerline of existing road, thence Southwesterly along arc of curve to left 131.94 feet (chord bears and distance South 30 degrees 30 minutes 17 seconds West 125.71) to Point of Beginning.

Parcel 2:
A parcel assessed for tax purposes as:
Government Lots 3 and 4 of Section 31, Town 22 North, Range 13 West, EXCEPT dam spillway and power facilities. ALSO, North 1/2 of the Northwest 1/4, EXCEPT, that part lying North of South line of Tower Road extension and East of Dilling Road/State Park.

Parcel 3:
Government Lot 2 of Section 36, Town 22 North, Range 14 West.

Parcel 4:
A parcel assessed for tax purposes as:
Part of Government Lot 1 of Section 36, Town 22 North, Range 14 West, commencing at Southeast corner of said Section, thence North 1942.92 feet to Point of Beginning, North 23 degrees 36 minutes 29 seconds West 95.60 feet, thence North 89 degrees 51 minutes 04 seconds West 1285.81 feet, thence North 630.8 feet, thence East to Manistee River, thence Southerly and Easterly upstream along river to East line of said Section, thence South along East line to Point of Beginning.

Parcel 5:
Northwest 1/4 of the Northwest 1/4 of the Northwest 1/4 of Section 5, Town 21 North, Range 13 West lying Southerly of backwaters of Tippy Dam.

Parcel 6:
A parcel assessed for tax purposes as:

All that part of North 3/4 Southwest 1/4 lying Westerly of Tippy Dam backwaters of Section 5, Town 21 North, Range 13 West.

Parcel 7:
Part of the Northeast 1/4 of Section 6, Town 21 North, Range 13 West, more fully described as: Commencing at the East 1/4 corner of said Section 6, thence North 01 degrees 51 minutes 12 seconds East along the East line of said Section 6, 2022.21 feet to Point of Beginning, thence continuing North 01 degrees 51 minutes 12 seconds East 437.15 feet, thence South 66 degrees 32 minutes 35 seconds West 48.93 feet, thence South 87 degrees 41 minutes 47 seconds West 74.31 feet; thence North 67 degrees 21 minutes 31 seconds West, 118.36 feet, thence South 33 degrees 33 minutes 05 seconds West, 337.00 feet, thence South 65 degrees 53 minutes 50 seconds East 438.74 feet to Point of Beginning.

Parcel 8:
A parcel assessed for tax purposes as:
The South 1/2 of the Northwest 1/4 of the Northeast 1/4 and the North 1/2 of the Southwest 1/4 of the Northeast 1/4 of Section 8, Town 21 North, Range 13 West.

Parcel 9:
A parcel of land in the Southwest 1/4 of Section 16, Town 21 North, Range 13 West, described as: Commencing at the Southwest corner of said section, run then South 89 degrees 49 minutes 55 seconds East, along the South line of said Section 925.94 feet, thence North 01 degrees 23 minutes 38 seconds East parallel with the West 1/8 line of said Section 323.98 feet to point which said point is 60 feet distant Northerly of Consumers Power Company's existing towner line, as measured at right angles, and the Place of Beginning for this description; thence continuing North 01 degrees 23 minutes 38 seconds East parallel with said West 1/8 line of said section 1797.29 feet, thence South 89 degrees 45 minutes 23 seconds East, 800 feet; thence South 01 degrees 23 minutes 38 seconds West, parallel with said West 1/8 line 800 feet; thence North 89 degrees 45 minutes 23 seconds West 87.51 feet to the centerline of Dam Road; thence South 08 degrees 13 minutes 10 seconds East along centerline 121.71 feet, thence South 48 degrees 00 minutes 55 seconds West along the center line of said road 391.98 feet; thence South 21 degrees 48 minutes 42 seconds West along the center line of said road 213.61 feet; thence South 50 degrees 03 minutes 21 seconds West along the center line of said road 162.42 feet, thence South 27 degrees 12 minutes 9 seconds West along the center line of said road 50 feet, thence South 09 degrees 21 minutes 16 seconds West 289.18 feet; thence South 31 degrees 32 minutes 07 seconds West 63.32 feet to point 60 feet northerly of the center line of Consumers Power Company's existing tower line, as measured at right angles; thence North 64 degrees 17 minutes 56 seconds West parallel with the center line of said tower line 173.40 feet to Point of Beginning.

<u>Webber Project</u>

Parcel 1:
A strip of land 132 feet in width described as beginning at the low watermark on the Easterly bank of the Grand River at its intersection with the East and West 1/4 line of Section 29, Town 7 North, Range 5 West, running thence South 90 degrees East along said East and West 1/4 line to a point 81.93 feet west (measured along said East and West 1/4 line) from the East line of said Section, thence South 48 degrees East (along

a line hereinafter referred to as Course A) 522.67 feet to the low watermark on the Northerly bank of said river in the West 1/2 of Section 28 of said Township and Range, thence Northeasterly along said river at low watermark to a point 132 feet Northeasterly (measured at right angles) from said Course A, thence North 48 degrees West 581.34 feet to a point 132 feet North (measured at right angles) from the East and West 1/4 line of said Section 29, thence West parallel with said East and West 1/4 line and 132 feet distant North therefrom to the low watermark on the Easterly bank of said river, thence Southerly along said river to the place of beginning.

Parcel 2:
A parcel of land in the Township of Lyons described as: That part of the Southeast fractional 1/4 of Section 32, lying Westerly of the Grand River and below contour 687.80 United States Government Survey Datum, Section 32, Town 7 North, Range 5 West.

Parcel 3:
Beginning at center of Section 33, thence East 120 rods, thence North to the center thread of the Grand River, thence Southwesterly upstream along the center thread of said river to the place of beginning, Section 3, Town 7 North, Range 5 West.

Parcel 4:
A parcel of land in the Township of Lyons, described as: That part of the West 110 acres of the Northwest 1/4 of Section 33, lying Northwesterly of the Grand River and below contour 687.80 United States Government Survey Datum, Section 33, Town 7 North, Range 5 West. A parcel of land in the Township of Lyons described as: That part of the East 47 acres of the Northwest 1/4 of Section 33, lying Northerly of Grand River and Southerly of the angling highway. A parcel of land in the Township of Lyons, described as: That part of the Southwest fractional 1/4 of Section 33 North of the Grand River lying below contour 687.80 United States Government Survey Datum, Section 33, Town 7 North, Range 5 West.

Parcel 5:
That part of the Southwest fractional 1/4 of Section 33, lying South of the Grand River below contour 687.80 United States Government Survey Datum, Section 33, Town 7 North, Range 5 West.
That part of the West 1/2 of the Southeast 1/4 of Section 33 lying Southeasterly of the Grand River and below contour 687.80 United States Government Survey Datum, Section 33, Town 7 North, Range 5 West.
Parcel 6:
So much of that part of the Northeast 1/4 of Section 33, Town 7 North, Range 5 West, lying Westerly of the Grand River, as is included in a strip of land 100 feet wide running across said premises being 50 feet wide on each side of a line which said line is described as beginning on the North line of said Section 33, at a point not more than 300 feet East of the North 1/4 post of said Section, thence running Southeasterly in a straight line to the South line of said above described land at a point not more than 900 feet East of the North and South 1/4 line of said Section 33.

Parcel 7:
Commencing at a point on the North and South 1/4 line of Section 33 in said Township situated 932 feet South of the North 1/4 post of said Section running thence South 89 degrees 50 minutes East 1540 feet; thence North 41 degrees East 510 feet to the Grand River, thence up stream along the river to the North and

South 1/4 line of said Section, thence North on the 1/4 line 472 feet more or less to the place of beginning. Except: A part of the Northeast 1/4 described as commencing at the North 1/4 corner of Section 3, thence South along the North/South 1/4 line 932 feet to the point of beginning; thence North 89 degrees 58 minutes East 452.71 feet, thence South parallel with North/South 1/4 line 483.88 feet, thence North 81 degrees 45 minutes West 457.45 feet to the
North/South 1/4 line; thence North 418 feet along the North/South 1/4 line to the point of beginning.

Parcel 8:
That part of the South 8.35 chains of Section 17, Town 6 North, Range 5 West, and the North 68 rods of Section 20, Town 6 North, Range 5 West, lying Westerly of the Grand River and below Elevation 687.80 United States Government Survey Datum, said land being occupied as one parcel.

Parcel 9:
That part of Section 4, Town 6 North, Range 5 West, lying Northerly of Grand River and below Elevation 687.80 United States Government Survey Datum. Also, that part of Section 4, Town 6 North, Range 5 West, lying Southerly of Grand River and below Elevation 687.80 United States Government Survey Datum.

Parcel 10:
That part of Island No. 1 lying South of the North line and West of the East line of Section 5, Town 6 North, Range 5 West.

Parcel 11:
That part of the East 1/2 of Section 5, Town 6 North, Range 5 West, lying Westerly of Grand River and below Elevation 687.80 United States Government Survey Datum.

Parcel 12:
That part of the West 1/2 of the Southwest 1/4 of Section 3, Town 6 North, Range 5 West, lying Northeasterly of the Grand River and below Elevation 687.80 United States Government Survey Datum.

Parcel 13:
That part of the West 1/2 of Section 20, Town 6 North, Range 5 West, Except the North 68 rods thereof lying Westerly of the Grand River and below Elevation 687.80 United States Government Survey Datum.

Parcel 14:
That part of the West 1/2 of Section 20, Town 6 North, Range 5 West, lying Easterly of the Grand River and below Elevation 687.80 United States Government Survey Datum.

Parcel 15:
That part of the North 1/2 of Section 9, Town 6 North, Range 5 West, lying Northerly of the Grand River and below Elevation 687.80 United States Government Survey Datum. That part of the North 1/2 of Section 9, Town 6 North, Range 5 West, lying Southerly of the Grand River and below Elevation 687.80 United States Government Survey Datum. Islands 19 and 20, Section 9, Town 6 North, Range 5 West.

Parcel 16:
That part of the West 1/2 of Section 17, Town 6 North, Range 5 West, except the South 8.35 chains thereof, lying Westerly of the Grand River and below Elevation 687.80 United States Government Survey Datum. That part of Section 17, Town 6 North, Range 5 West, lying Easterly of the Grand River and below Elevation 687.80 United States Government Survey Datum. Islands 12, 13, 14, and 15, Section 17, Town 6 North, Range 5 West.

Parcel 17:
That part of the Northwest 1/4 of Section 10, Town 6 North, Range 5 West, lying Southeasterly of the Grand River and below Elevation 687.80 United States Government Survey Datum.

EXHIBIT A-2

Project Descriptions

1. **Alcona Project (FERC No. 2447)**. The Alcona Project is located on the Au Sable River in northeastern Michigan, about three miles west of Glennie, Michigan. The Alcona Project was completed in 1924 with a combined capacity of the two turbine-generator units of approximately 8.0MWs. The FERC boundary encompasses approximately 1,800 acres. Of this acreage, 725 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

2. **Calkins Bridge Project (FERC No. 785)**. The Calkins Bridge Project is located on the Kalamazoo River in Allegan County, approximately six miles northwest of the City of Allegan. The Calkins Bridge Project was completed in 1936 with a combined rated capacity of its three units of approximately 2.55 MWs. The FERC boundary encompasses approximately 1,800 acres. Of this acreage, 141 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

3. **Cooke Project (FERC No. 2450)**. The Cooke Project is located on the Au Sable River in Iosco County, downstream from the Five Channels Project, and about twelve miles west of Oscoda, Michigan. The project was completed in 1911 with a combined capacity of the three generating units of approximately 7.5 MWs. The FERC boundary encompasses approximately 2,400 acres. Of this acreage, 773 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

4. **Croton Project (FERC No. 2468)**. The Croton Project construction started in 1904, with the first two generating units coming online in 1907. The second two units were added in 1915 for a total capacity of approximately 9.0 MWs. The Croton Project is located on the Muskegon River, near Croton Township. The Croton Project is downstream of the Rogers and Hardy Projects. The FERC boundary contains approximately 1,600 acres. Of this acreage, 400 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

5. **Five Channels Project (FERC No. 2453)**. The Five Channels Project is located on the Au Sable River about 17 miles west of Oscoda in Iosco County, Michigan, upstream of the Cooke Project impoundment. The Five Channels Project, completed in 1912, has two generating units with a combined capacity of approximately 6.0 MWs. The FERC boundary contains approximately 600 acres. Of this acreage, 350 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

6. **Foote Project (FERC No. 2436)**. The Foote Project is located on the Au Sable River in Iosco County, Michigan, about 6 miles west of Oscoda. The Foote Project was completed in 1918 with a combined capacity of the three turbine-generator units of approximately 9.0 MWs. The FERC boundary contains approximately 3,300 acres. Of this acreage, 1,500 acres is dry land, with the remaining balance consisting of the bottom lands for the reservoir.

7. **Hardy Project (FERC No. 2452)**. The Hardy Project is located on the Muskegon River near Oxbow, Michigan. The Hardy Project was completed in 1931 and is downstream of the Rogers Project and upstream from the Croton Project. The Hardy Project's three generating units have a combined capacity of approximately 32.5 MWs. The FERC boundary contains approximately 8,800 acres. Of this acreage, 5,000 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

8. **Hodenpyl Project (FERC No. 2599)**. The Hodenpyl Project is on the Manistee River, approximately 23 miles northwest of Cadillac, Michigan. The Hodenpyl Project is approximately 12 river miles upstream of the Tippy Project. The dam was completed in 1925 with a combined rated capacity of approximately 18.0 MWs. The FERC boundary contains approximately 4,300 acres. Of this acreage, 2,500 acres is dry land, with the remaining balance consisting of the bottom lands for the reservoir.

9. **Loud Project (FERC No. 2449)**. The Loud Project is located on the Au Sable River in Iosco County, Michigan, upstream from the Five Channels Project. The Loud Project was completed in 1913 with a combined capacity of the two turbine-generators of approximately 4.0 MWs. The FERC boundary contains approximately 1,300 acres. Of this acreage, 510 acres is dry land, with the remaining balance consisting of the bottom lands for the reservoir.

10. **Mio Project (FERC No. 2448)**. The Mio Project is in Oscoda County, Michigan on the Au Sable River near the town of Mio. The Mio Project was completed in 1916 with a combined capacity from its two generating units of approximately 5.0 MWs. The FERC boundary contains approximately 1,800 acres. Of this acreage, 500 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

11. **Rogers Project (FERC No. 2451)**. The Rogers Project is located on the Muskegon River approximately six miles south of Big Rapids, Michigan. Constructed in 1905, and rebuilt after a fire in 1922, the Rogers Project has four generating units that have a combined capacity of approximately 6.72 MWs. The Roger Project is upstream of both Hardy and Croton Dams. The FERC boundary contains approximately 800 acres. Of this acreage, 350 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

12. **Tippy Project (FERC No. 2580)**. The Tippy Project is located on the Manistee River approximately 19 miles east of Manistee, Michigan and approximately 12 river miles downstream of the Hodenpyl Project. The Tippy Project was completed in 1918 and has three generating units that have a combined capacity of approximately 20.0 MWs. The FERC boundary contains approximately 2,800 acres. Of this acreage, 1,500 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

13. **Webber Project (FERC No. 2566)**. The Webber Project is located on the Grand River near Ionia, Michigan. Constructed in 1907, the Webber Project has approximately 3.3 MW of combined capacity from its two generating units. The FERC boundary contains approximately 800 acres. Of this acreage, 140 acres are dry land, with the remaining balance consisting of the bottom lands for the reservoir.

All generating capacity, measurements, and boundary descriptions contained herein are estimates and shall not be relied upon by Purchaser. Additionally, past performance and capacity is not a guarantee of future performance or capacity for each Project. Purchaser may obtain a survey as provided in Section 3.1(b) of the Agreement.

EXHIBIT A-3

Descriptions of the Residential Fee Simple Real Property

Address	Parcel Number	Total Acres
19894 Lincoln Rd. Stanwood, Mecosta County, MI 49346	54-09-014-009-000	14.32
19908 Lincoln Rd. Stanwood, Mecosta County, MI 49346	54-09-014-010-000	0.27
19889 Lincoln Rd. Stanwood, Mecosta County, MI 49346	54-09-014-011-000	5.45
9608 Northland Dr. Stanwood, Mecosta County, MI 49346	54-09-014-007-000	2.64

EXHIBIT B

Substations

Project	Substation Name	Substation Location
Alcona	Alcona Dam Substation	Curtis Twp, Alcona Co, MI
Cooke	Cooke Dam Substation	Oscoda Township, Iosco Co, MI
Croton	Croton Substation Conklin Park Substation (Electric Distribution Only)	Croton Twp, Newaygo Co, MI
Five Channels	Five Channels Hydro Substation	Oscoda Township, Iosco Co, MI
Foote	Foote Hydro Substation	Oscoda Township, Iosco Co, MI
Hodenpyl	Hodenpyl Substation	Springville Twp, Wexford Co, MI
Loud	Loud Hydro Substation	Oscoda Twp, Iosco Co, MI
Rogers	Rogers Hydro Substation Stanwood Easement	Mecosta Twp, Mecosta Co, MI
Tippy	Snyder Substation (Electric Distribution Only)	Dickson Twp, Manistee Co, MI
Webber	Webber Dam Substation	Lyons and Portland Twps, Ionia Co, MI

EXHIBIT C

Form of Temporary Substation Easements

TEMPORARY SUBSTATION EASEMENT AGREEMENT

THIS TEMPORARY SUBSTATION EASEMENT AGREEMENT (this "**Agreement**") is made this _____ day of _____, 2___ (the "**Effective Date**"), by and between **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("**Grantor**"), a grantor for indexing purposes; and **CONSUMERS ENERGY COMPANY**, a Michigan corporation ("**Grantee**"), a grantee for indexing purposes (the Grantor and Grantee are sometimes referred to individually as the "**Party**" or collectively as the "**Parties**").

W I T N E S S E T H:

1. That for and in consideration of the sum of Ten and 00/100 Dollars ($10.00), cash in hand paid, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Grantor hereby grants and conveys unto Grantee and its apportionees, licensees, permittees, invitees, successors, successors-in-title and assigns, and their respective agents, employees, servants, tenants, subtenants, licensees, permittees, customers, invitees, contractors and subcontractors (collectively, the "**Grantee Parties**"), the following exclusive (except as expressly provided herein) and rights, privileges and easements of right-of-way (collectively, the "**Easements**"):

(a) The rights to lay, construct, install, maintain, improve, alter, inspect, repair, replace, relocate and operate an electric transmission and distribution substation, together with all appurtenances, equipment and facilities necessary or desirable for the purposes of transmitting and distributing electric power and for ancillary telecommunications and other communications purposes (whether or not related to the transmission or distribution of electric power), including, but not limited to, transformers, regulators, capacitors, wires, lines, poles, towers, structures, cables, guy wires, conduits, pipes, mains, manholes, handholes, meters, attachments, ground connections, equipment, fences, telecommunications equipment and all accessories desirable in connection with the foregoing, any of which may be located above or below ground (collectively, the "**Substation Facilities**"), on, under, over, upon, through and across that certain real property of Grantor situated in the County of _____, Michigan (the "**Substation Property**"), which Substation Property is more particularly described on Exhibit B, attached hereto and by this reference made a part hereof (the "**Substation Easement**"). The Substation Easement is designated as [_____] on that certain [plat of survey] entitled [_____], prepared by [_____] and dated [_____] (the "**Plat**"), a copy of which is attached hereto as Exhibit A, and by this reference made a part hereof, and to which Plat reference is hereby made for a more particular description of the Substation Easement.

(b) The non-exclusive rights of vehicular and pedestrian ingress and egress to and from the Substation Property and/or Mobile Substation Property (as defined below) and **[INSERT PUBLIC ROW]** on, under, over, upon, through and across a portion of certain real property of Grantor situated in the County of _____ , Michigan (the "**Access Easement Property**"), which Access Easement Property is more particularly described on Exhibit C, attached hereto and by this reference made a part hereof (the "**Access Easement**"). The Access Easement is designated as [_____] on the Plat, and to which Plat reference is hereby made for a more particular description of the Access Easement.

(c) The right to enter upon and trim, cut, remove, destroy, or otherwise control all trees and vegetation located on that certain real property of Grantor situated in the County of _____, Michigan (the "**Protection Easement Property**"), which Protection Easement Property is more particularly described on Exhibit D attached hereto and by this reference made a part hereof and the right to trim, cut, remove, destroy, or otherwise control all trees and vegetation 80 feet outside of the fence and remove all hazard trees in accordance with the above (the "**Protection Easement**").

(d) The right to from time to time install, operate, maintain, and remove a mobile electric substation (the "**Mobile Substation**"), with associated electric lines and equipment and perimeter fencing, on, under, over, upon, through and across that certain real property of Grantor situated in the County of _____, Michigan (the "**Mobile Substation Property**"), which Mobile Substation Property is more particularly described on Exhibit E, attached hereto and by this reference made a part hereof, together with any temporary pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus, and all other equipment, appurtenances, associated fixtures, and facilities or incidental to or for the operation or protection thereof (the "**Mobile Substation Easement**").

The Substation Property, Access Easement Property, the Protection Easement Property, and Mobile Substation Property are hereinafter collectively referred to as the "**Easement Areas**".

2. Grantor and Grantee agree that this Agreement shall be for a term commencing on the Effective Date and terminating on the earlier of: (i) the date on which the Substation Facilities are decommissioned and (ii) ten (10) years following the Effective Date (the "**Term**"), and Grantee has constructed a new substation on certain other real property owned by Grantor. Upon completion of the decommissioning of the Substation Facilities and construction of the new substation on such certain other real property owned by Grantor, as evidenced by written notice from Grantee to Grantor, Grantee shall execute and record a termination and release of this Agreement in form mutually agreeable to Grantor and Grantee.

3. Grantor hereby agrees that among the easement rights conveyed to Grantee and the Grantee Parties are the rights to: (a) clear, remove and dispose of, from time to time, all natural or manmade obstructions in the Substation Property, Mobile Substation Property or on the Access Easement Property and adjacent to and outside the Easement Areas, as Grantee may deem necessary or desirable for the construction, installation, operation, maintenance, repair, relocation, replacement, improvement or alteration of the Substation Facilities; (b) have unobstructed and unrestricted ingress and egress over the Access Easement in order to provide unobstructed and unrestricted access to the Substation Facilities at all times; and (c) keep the Easement Areas clear of all buildings or structures, trees, stumps, roots and undergrowth and to trim or fell any tree outside the Easement Areas which, in the opinion of Grantee, may constitute a hazard or endanger the safe or proper use or operation of the Access Easement or the Substation Facilities, including, but not limited to, any tree that in falling or being felled could come within fifteen (15) feet of the Easement Areas.

4. No buildings or other structures may be constructed in the Easement Areas without the prior written consent of Grantee, which consent may be withheld in Grantee's sole and absolute discretion. With the prior written consent of Grantee, in its sole and absolute discretion, Grantor, its lessees, successors, successors-in-title and assigns, may use the unenclosed portions of the Easement Areas for any purpose not inconsistent with the rights hereby granted (the "**Permitted Encroachments**"), provided that such Permitted Encroachments do not interfere with or endanger any of the Easements or other rights hereby

granted, including, but not limited to, the construction, operation or maintenance of the Substation Facilities or Mobile Substation or ingress to and egress from the Easement Areas and/or or any part thereof. In no event shall Grantor or its lessees, invitees, licensees, successors, successors-in-title or assigns have the right to access any portion of the Substation Easement or any of the Substation Facilities or any portion the Mobile Substation or Mobile Substation Easement when a Mobile Substation is present on the Mobile Substation Easement. Grantee shall at all times have the right to cross or cut through any Permitted Encroachments and upon prior notice to Grantor, when reasonably possible under the circumstances, (except in emergency situations where no notice shall be required), to interrupt, prevent or alter the use thereof, for the purposes of constructing, maintaining, operating, repairing, altering or replacing the Substation Facilities, Mobile Substation, or any part thereof.

5. No delay or interruption by Grantee or Grantee Parties in the use or enjoyment of any right or easement hereby granted shall result in the loss, limitation or abandonment of any of the rights, title, interests, Easements or estates granted hereby. No rights, privileges or Easements granted under this Agreement are intended for public use (other than the use of the Access Easement, the Substation Easement, Protection Easement, and the Mobile Substation Easement by public safety, emergency and fire personnel and vehicles).

6. The Easements and other rights set forth in this Agreement shall be for the use, benefit and enjoyment of Grantee and Grantee Parties. This Agreement, each and all of its terms, conditions and provisions, and the Easements, rights, and privileges created hereby shall be binding upon and shall inure to the benefit of Grantee and Grantor and their respective successors, successors-in-title, and assigns. Grantor agrees that all of the Easements, rights and privileges set forth herein shall touch, concern, burden and run with the title to the Substation Property, Mobile Substation Property, Protection Easement Property, and the Access Easement Property.

7. Grantor hereby represents and warrants that (i) for the duration of the Term, Grantee and Grantee Parties shall have quiet enjoyment and peaceable possession, use and enjoyment of the Easement Areas and (ii) Grantee and Grantor and its successors, successors-in-title and assigns shall execute and deliver such further assurances thereof as may be required.

8. The Substation Facilities and Mobile Substation shall at all times be and remain the property of Grantee. Grantee shall have the right to inspect, rebuild, repair, improve, relocate within the Substation Property and make such changes, alterations, substitutions, additions to or extensions of the Substation Facilities and Mobile Substation as Grantee may from time to time deem advisable.

9. Grantor hereby establishes that, as a covenant running with the title to the Substation Property and Mobile Substation Property and for the benefit of Grantee and Grantee Parties neither Grantor nor any of its successors, successors-in-title or assignor their respective lessees, tenants, customers, invitees, permittees or licensees shall file, assert or maintain, be a party to or permit to be filed, maintained or asserted any suit, cause of action, claim or proceeding of any kind or nature against any one (1) or more of the Grantee or Grantee Parties for any damages (including, but not limited to, indirect, punitive or consequential damages), liabilities, expenses, losses, costs, injuries (including death) or claims based on or in any way arising out of or related to the intrusion, transmittal or occurrence of any noises, sounds, sound waves, light, vibrations or similar effects from the Easements and/or the Substation Facilities or Mobile Substation on, under, over, upon, through, across and around the Substation Property or Mobile Substation Property, nor shall Grantor or any such occupant, user, lessee, tenant, customer, invitee, permittee or licensee of the Substation Property or Mobile Substation Property permit, bring or support any action to modify or change the current zoning or use permitted for the Substation Property or Mobile Substation Property without the prior written consent of Grantee, such consent not to be unreasonably withheld, conditioned or delayed.

10. Each Party (the "**Indemnifying Party**") shall defend, indemnify and hold harmless the other Party (each, an "**Indemnified Party**") from and against any and all third party (excluding affiliates of Indemnified Party) claims, litigation, actions, proceedings, losses, damages, liabilities, obligations, costs and expenses, including reasonable attorneys' fees, court costs and litigation expenses, for personal or property damage (collectively, "**Claims**") suffered or incurred by such Indemnified Party, as a result of a breach of this Agreement by the Indemnifying Party or the Indemnifying Party's negligent or willful misconduct in using the Easement Area. In no event shall either Party be liable to the other Party to the extent any Claim is caused by, arising from or contributed by the negligence or intentional misconduct of such other Party.

11. After the Effective Date, Grantee may, at Grantee's sole cost and expense, deliver to Grantor one or more reasonably requested changes to the terms, legal descriptions and/or location details of the Easements and/or Easement Areas as reflected herein. Upon such request, the Parties shall work in good faith to reach mutual agreement on any such changes, such agreement not to be unreasonably withheld, conditioned or delayed by either Party. The Parties shall execute an amendment to this Agreement in recordable form as may be reasonably necessary to memorialize any such mutually agreed upon changes. If reasonably required by Grantor, Grantor shall in accordance with applicable law and as Grantor may otherwise reasonably deem necessary, give notice to or seek approval (in form and substance reasonably acceptable to Grantor) from the Federal Energy Regulatory Commission ("**Commission**") for any such changes as a condition to executing any such amendment, in which case, the Parties shall cooperate and work in good faith to give such notices or seek such approvals as soon as reasonably practicable. Upon the execution of any such amendment, Grantee shall cause the amendment to be recorded at Grantee's sole cost and expense. For the avoidance of doubt, any costs or expenses reasonably incurred in connection with any changes requested by Grantee pursuant to this Section 11 shall be borne fully by Grantee.

12. This Agreement contains the entire agreement between the parties hereto relating to the subject matter hereof and supersedes all prior and contemporaneous negotiations, understandings and agreements, written or oral, between the parties hereto. This Agreement shall not be amended, modified or terminated and no waiver of any provision hereof shall be effective unless set forth in a written instrument executed with the same formality as this Agreement.

13. If any provision of this Agreement shall be unenforceable in whole or in part, such provisions shall be limited to the extent necessary to render the same valid, or shall be excised from this Agreement, as circumstances require, and this Agreement shall be construed as if such provision had been incorporated herein as so limited or as if such provision had not been included herein, as the case may be.

14. This Assignment may be executed in any number of counterparts, and it shall be sufficient that the signature of each party appears on one or more such counterparts. All counterparts shall collectively constitute a single agreement.

15. All questions with respect to the construction of this Agreement and the rights and liabilities of the parties hereto shall be determined in accordance with the applicable provisions of the laws of the State of Michigan.

16. Notwithstanding any other provision contained herein, Grantor, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. [_____], Commission orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantee.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, Grantor and Grantee have caused this Agreement to be executed by their respective duly authorized representatives as of the day and year first above written.

GRANTOR:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By:_____
Name:_____
Title:_____

STATE OF _____

CITY/COUNTY OF _____:

The foregoing Temporary Substation Easement Agreement was acknowledged before me this ____ day of _____, 2_____ by _____, _____ of Confluence Hydro, LLC, a Delaware limited liability company, who is personally known to me or has produced his/her drivers license as identification and who did take an oath.

[Notarial Seal]

_____
Notary Public
My Commission Expires:_____

[SIGNATURES CONTINUE ON THE FOLLOWING PAGE]

GRANTEE:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name: _____
Title: _____

STATE OF _____

CITY/COUNTY OF _____:

The foregoing Temporary Substation Easement Agreement was acknowledged before me this ____ day of _____, 2_____ by _____, _____ of Consumers Energy Company, a Michigan corporation, who is personally known to me or has produced his/her drivers license as identification and who did take an oath.

[Notarial Seal]

_____
Notary Public
My Commission Expires:_____

REDACTED

Exhibit A

The Plat

REDACTED

Exhibit B

Legal Description of the Substation Property

Exhibit C

Legal Description of the Access Easement Property

REDACTED

Exhibit D

Legal Description of the Protection Easement Property

Exhibit E

Legal Description of the Mobile Substation Property

EXHIBIT D

Shoreline Licenses

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Alcona	License	2447-03	Alcona County Parks and Recreation Commission	Snowmobile Trail	T25N, R5E, Sec 14	$260.00	9384
AuSable River (*)	Cooke	License	2450-02	Robert Schniers, et al	Group Dock	T24N, R7E, Sec 21	$350.00	9390
AuSable River (*)	Cooke	License	2450-03	Dana and Jane Hayward, et al	Group Dock	T24N, R7E, Sec 21	$500.00	9395
AuSable River (*)	Cooke	License	2450-04	Barbara Carpenter, et al	Group Dock	T24N, R7E, Sec 20	$425.00	9389
AuSable River (*)	Cooke	License	2450-05	Duane and Kimberly Switala, et al	Group Dock	T24N, R7E, Sec 20	$475.00	9392
AuSable River (*)	Cooke	License	2450-07	Mary Hoerlein, et al	Group Dock	T24N, R7E, Sec 29	$350.00	9386

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Cooke	License	2450-08	Sandra Jones	Individual Dock	T24N, R7E, Sec 29	$340.00	9391
AuSable River (*)	Cooke	License	2450-09	Gary Folwell, et al	Group Dock	T24N, R7E, Sec 15	$525.00	9387
AuSable River (*)	Cooke	License	2450-21	Rick and Beth Weaver	Individual Dock	T24N, R7E, Sec 29	$340.00	9394
AuSable River (*)	Cooke	License	2450-23	Gregory Schultz	Landscaping	T24N, R7E, Sec 15	$165.00	9388
AuSable River (*)	Cooke	License	2450-24	Brian Purchase and Rosarita Rullan	Landscaping	T24N, R7E, Sec 29	$140.00	9393
AuSable River (*)	Cooke	License	2450-25	Michelle Jimenez	Landscaping	T24N, R7E, Sec 20	$140.00	12779
AuSable River (*)	Five Channels	License	2453-09	Cebert Watson, et al	Group Dock	T24N, R6E, Sec 22	$350.00	9409
AuSable River (*)	Five Channels	License	2453-10	Gerard Duroucher, et al	Group Dock	T24N, R6E, Sec 22	$350.00	9412

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Five Channels	License	2453-11	Dale R. Nickell, et al	Group Dock	T24N, R6E, Sec 22	$350.00	9407
AuSable River (*)	Five Channels	License	2453-14	Patricia Ann Atkinson, et al	Cabin	T24N, R6E, Sec 21	$580.00	9416
AuSable River (*)	Five Channels	License	2453-15	Christopher and Lisa Paten	Landscaping	T24N, R6E, Sec 21	$140.00	9410
AuSable River (*)	Five Channels	License	2453-16	Christopher and Lisa Paten	Individual Dock	T24N, R6E, Sec 21	$340.00	9414
AuSable River (*)	Five Channels	License	2453-18	John Swies	Individual Dock	T24N, R6E, Sec 21	$340.00	9408
AuSable River (*)	Five Channels	License	2453-21	Kenneth and Sauna Jenkins	Landscaping	T24N, R6E, Sec 23	$140.00	9415
AuSable River (*)	Five Channels	License	2453-22	Nickolas Ristich	Individual Dock	T24N, R6E, Sec 21	$340.00	9411
AuSable River (*)	Five Channels	License	2453-22A	Nickolas Ristich	Landscaping	T24N, R6E, Sec 21	$140.00	9413

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Foote	License	2436-01	Oscoda Area Schools	Blue Horizon Outdoor Education Center/Non-Profit Recreation	T24N R8E Sec 34, 27	NA	9421
AuSable River (*)	Foote	License	2436-02	United States of America, Dept of Interior, Fish and Wildlife Service and Beatrice M. Chellis	Installing, maintaining , and removal of two steel wire fish traps, used for sea lamprey study/Gov't Non-Rec.	T24N R8E Sec 36	NA	9426
AuSable River (*)	Foote	License	2436-04	Seven Mile Hill Property Owners Association, Inc.	Swimming, Picnicking, Marina, Underground Tanks and Docks/Clubs or Association	T24N, R8E, Sec 34	$1,800.00	9430
AuSable River (*)	Foote	License	2436-07	Leslie R Woods and Vickey D Woods	Encroachments and Landscaping	T24N, R8E, Sec 27	$260.00	9438
AuSable River (*)	Foote	License	2436-08	Lammi Enterprises, Inc	Landscaping	T24N, R8E, Sec 34	$260.00	9419
AuSable River (*)	Foote	License	2436-13	Walter J Austin, Jr	Landscaping	T24N, R8E, Sec 34	$140.00	9424

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Foote	License	2436-16	Joseph R and Terrie L Stypelkoski	Landscaping	T24N, R8E, Sec 35	$140.00	9427
AuSable River (*)	Foote	License	2436-19	Bissonette Landing, Inc	Picnicking, Marina, Underground Tanks and Docks/Association or Club	T24N, R8E, Sec 20	$1,800.00	9435
AuSable River (*)	Foote	License	2436-22	Stanley Gale	Landscaping, mowing and storage of temporary, removable personal items	T24N, R8E, Sec 27	$140.00	9418
AuSable River (*)	Foote	License	2436-24	David and Renee Vroman	Landscaping and gardening, with right to fence	T24N, R8E, Sec 35	$140.00	9423
AuSable River (*)	Foote	License	2436-25	Amy Ruedisueli	Landscaping	T24N, R8E, Sec 34	$140.00	9429
AuSable River (*)	Foote	License	2436-26	County of Iosco	Snowmobile Trail and Off Road Vehicle Trail Purposes/ Gov. N-P Recr.	T24N, R8E, Sec 28, 33, 34 T24N, R6E, Sec 23	$260.00	9422
AuSable River (*)	Foote	License	2436-27	Riverqueen Excursions, Inc	Paddlewheel Excursion Watercraft, Office, Gift Shop, Night Watchman	T24N, R8E, Sec 34	$1,100.00	9434

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
					Quarters and Vehicle Parking/Commercial			
AuSable River (*)	Foote	License	2436-28	Carl Osso	Gardening, Landscaping, and Storage of portable, personal items	T24N, R8E, Sec 34	$140.00	9437
AuSable River (*)	Foote	License	2436-29	Jeff Austin	Landscaping and Gardening	T24N, R8E, Sec 34	$140.00	942
AuSable River (*)	Foote	License	2436-30	Richard Reed	Individual Dock	T24N, R8E, Sec 27	$340.00	9425
AuSable River (*)	Foote	License	2436-31	Michael and Melissa Krajnik	Individual Dock	T24N, R8E, Sec 27	$340.00	9428
AuSable River (*)	Foote	License	2436-32	Linda and Daniel Moormann	Individual Dock	T24N, R8E, Sec 27	$340.00	9432
AuSable River (*)	Foote	License	2436-33	Larry and Roxanne Gerhardt	Individual Dock	T24N, R8E, Sec 27	$340.00	9436
AuSable River (*)	Foote	License	2436-34	Dale Ballentine, et al	Group Dock	T24N, R8E, Sec 27	$350.00	9417

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
AuSable River (*)	Mio	License	2448-04	Jerry and Betty Edwards	Landscaping, and Storage of small, temporary personal property items	T26N, R2E, Sec 3	$140.00	9539
AuSable River (*)	Mio	License	2448-05	Jerry and Betty Edwards	Dockage of watercraft	T26N, R2E, Sec 3	$340.00	9542
AuSable River (*)	Mio	License	2448-06	Larry and Marcia Sawyer	Landscaping, gardening, and storage of small, temporary personal property	T26N, R2E, Sec 3	$140.00	9547
AuSable River (*)	Mio	License	2448-15	Daniel P Long and Joanne C Long, et al	Recreational Cabin Site, Seasonal Use Only	T26N, R2E, Sec 5	$680.00	9545
AuSable River (*)	Mio	License	2448-17	Bernice A Morse	Individual Boat Dock, Landscaping, Electric Chair Lift	T26N, R2E, Sec 11	$340.00	9548
AuSable River (*)	Mio	License	2448-22	John S. Baxter et al	Seasonal Recreational Cabin Site	T26N, R2E, Sec 5	$680.00	9552
AuSable River (*)	Mio	License	2448-23	Jerry F Meisner	Landscaping and gardening	T26N, R2E, Sec 11	$140.00	9557
AuSable River (*)	Mio	License	2448-25	Marie Marlowe &	Ingress, Egress along existing trail/Trail Access	T26N, R2E, Sec 12, 11	$30.00	9540

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
				Kristin Pavliscak				
AuSable River (*)	Mio	License	2448-27	Chris Voydanoff, et al	Group Dock & Landscape	T26N, R2E Sec 2	$475.00	9543
AuSable River (*)	Mio	License	2448-28	Big Creek Township	Picnicking, Public Access/Non-Profit Rec.	T26N, R2E, Sec 12 T26N, R3E, Sec 7	NA	9549
AuSable River (*)	Mio	License	2448-30	Victor Kinney	Landscaping and Storage of temporary personal property items	T26N, R2E Sec 12	NA	9556
AuSable River (*)	Mio	License	2448-33	Justin Tazzi	Cabin Site, Recreational Purposes, Storage Building, and a driveway for access to property and the parking of motor vehicles	T26N, R2E, Sec 5	$680.00	9561
AuSable River (*)	Mio	License	2448-36	David Simpson, Rainbow Resort LLC	Boating Access, Parking & Boat Docks/Rec. Business	T26N, R2E, Sec 3	$1,050.00	9541
AuSable River (*)	Mio	License	2448-37	Brian & Bethany Disel	Docking of watercraft, Storage of temporary personal items and	T26N, R2E, Sec 3	$340.00	9544

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
					access to the licensed area/Individual Dock			
AuSable River (*)	Mio	License	2448-41	Linda and Alfred Chaney	Landscaping, gardening, a portion of a drain field, and temporary storage of personal items, including wooden split rail fencing	T26N, R2E Sec 2	$140.00	9551
AuSable River (*)	Mio	License	2448-42	Jeffrey and Amy Sherman	Landscaping, mowing and ingress/egress	T26N, R2E Sec 2	$140.00	9554
AuSable River (*)	Mio	License	2448-43	James Broner	Landscaping/gardening, mowing, satellite dish, fire pit and temporary storage of personal items	T26N, R2E Sec 2	$140.00	9560, 9537
AuSable River (*)	Mio	License	2448-47	James Walkowski	Gardening, Landscaping, Mowing, and temporary storage of personal items	T26N, R2E, Sec 3	$140.00	9546
AuSable River (*)	Mio	License	2448-52	Gregory and Joany Reno	Docking of Watercraft and access to licensed area/Individual Dock	T26N, R2E, Sec 3	$340.00	9550
AuSable River (*)	Mio	License	2448-53	Robert Gardner	Cabin Site, Recreational Purposes, Storage Building, and a driveway for access to	T26N, R2E, Sec 5	$680.00	9555

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
					property and the parking of motor vehicles			
AuSable River (*)	Mio	License	2448-56	Big Creek Township	Thompson Road Culvert/Misc. Govt	T26N, R2E Sec 2	$100.00	9558
AuSable River (*)	Mio	Temp License	2448-61	AuSable Internation Canoe Marathon Inc.	AuSable River Canoe Marathon (effective 7/22-28/2025)	T26N, R2E, Sec 12		12780
Grand River (*)	Webber	License	2566-03	Tom and Germaine Simon	Gardening, Landscaping, Pasture and General Crop Farming Purposes	T6N, R5W, Sec 17, 20	$25.00	12781
Kalamazoo River	Allegan/Calkins	Permit	785-04	William Carr	Dock, Seawall	T2N, R14W, Sec 24	NA	12783
Kalamazoo River	Allegan/Calkins	Permit	785-05	John F. Irwin	Dock, Seawall	T2N, R14W, Sec 14	NA	12784
Kalamazoo River	Allegan/Calkins	Permit	785-06	Annette Bates	Dock, Seawall	T2N, R14W, Sec 14	NA	12782
Kalamazoo River	Allegan/Calkins	Permit	785-07	Scott Van Wingerden	Dock, Seawall	T2N, R14W, Sec 22	NA	12785

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-08A	Martha Hesse	Seawall, Dock	T2N, R14W, Sec 23	NA	12787
Kalamazoo River	Allegan/Calkins	Permit	785-09	Robert and Patricia Cyle	Dock, Seawall	T2N, R14W, Sec 23	NA	12786
Kalamazoo River	Allegan/Calkins	Permit	785-10	Debra Mathis Trust	Dock, Seawall	T2N, R14W, Sec 23	NA	12788
Kalamazoo River	Allegan/Calkins	Permit	785-100	Ronald Spatzek	Dock, Seawall, Stairway	T2N, R14W, Sec 13	NA	12911
Kalamazoo River	Allegan/Calkins	Permit	785-101	Dennis L and Bernadette A Baker	Dock	T2N, R14W, Sec 22	NA	12910
Kalamazoo River	Allegan/Calkins	Permit	785-102	Andrew Plesnicar	Dock, Seawall, Stairway	T2N, R14W, Sec 13	NA	12912
Kalamazoo River	Allegan/Calkins	Permit	785-103	William Reidy, President Reidy Vacation Property, LLC	Dock, Seawall, Stairway, Deck	T2N, R14W, Sec 22	NA	12913

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-104	Halina and Jozef Batko	Dock, Seawall, Stairway	T2N, R14W, Sec 23	NA	12914
Kalamazoo River	Allegan/Calkins	Permit	785-105	Michael J Maglis	Dock, Stairway, Deck and Shed	T2N, R14W, Sec 13	NA	12915
Kalamazoo River	Allegan/Calkins	Permit	785-106	Ross and Ardith Wakefield	Dock	T2N, R14W, Sec 14	NA	12971
Kalamazoo River	Allegan/Calkins	Permit	785-107	Radi and Diane Akel	Dock, Seawall, Stairway/Motorized Chair Lift, Platform @ base	T2N, R14W, Sec 22	NA	12916
Kalamazoo River	Allegan/Calkins	Permit	785-109	Robert and Marylou Nunamaker	Dock and Stairway	T2N, R13W, Sec 19	NA	12918
Kalamazoo River	Allegan/Calkins	Permit	785-110	John M Turcich	Dock, Seawall, Stairway, Boat Lifts	T2N, R14W, Sec 13	NA	12919
Kalamazoo River	Allegan/Calkins	Permit	785-111	William D Brooks and Erin Campbell-Brooks	Dock and Seawall	T2N, R14W, Sec 24	NA	12920

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-112	James A and Rosemary L Ross	Dock, Seawall, Stairway, Deck	T2N, R14W, Sec 23	NA	12921
Kalamazoo River	Allegan/Calkins	Permit	785-113	Frederick P Hacker	Dock	T2N, R14W, Sec 13	NA	12922
Kalamazoo River	Allegan/Calkins	Permit	785-114	Thomas and Linda Beveridge	Dock	T2N, R13W, Sec 19	NA	12923
Kalamazoo River	Allegan/Calkins	Permit	785-115	Indian Shores Property Owners Association	Seawall, Dock, Boat Ramp, Beach	T2N, R14W, Sec 14	NA	12877
Kalamazoo River	Allegan/Calkins	Permit	785-116	Shirley Hall	Dock, Seawall	T2N, R13W, Sec 18 & 19	NA	12875
Kalamazoo River	Allegan/Calkins	Permit	785-117	John and Mary Anderson	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12876
Kalamazoo River	Allegan/Calkins	Permit	785-118	Thomas Chappell	Dock, Seawall, Stairway	T2N, R13W, Sec 19	NA	12879
Kalamazoo River	Allegan/Calkins	Permit	785-119	Mark L Doyle	Dock, Stairway	T2N, R14W, Sec 22	NA	12878

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-120	Daniel Zigulich	Dock, Stairway, Storage Shed	T2N, R14W, Sec 14	NA	12880
Kalamazoo River	Allegan/Calkins	Permit	785-121	Sean Steimle	Dock	T2N, R14W, Sec 14	NA	12881
Kalamazoo River	Allegan/Calkins	Permit	785-122	Les Whallon	Dock	T2N, R13W, Sec 18	NA	12882
Kalamazoo River	Allegan/Calkins	Permit	785-123	John Strong	Dock, Seawall, Stairway	T2N, R14W, Sec 23	NA	12884
Kalamazoo River	Allegan/Calkins	Permit	785-124A	Evan C. Anderson	Dock	T2N, R14W, Sec 14	NA	12883
Kalamazoo River	Allegan/Calkins	Permit	785-125	Linda Ludington	Seawall, Stairway	T2N, R14W, Sec 14	NA	12885
Kalamazoo River	Allegan/Calkins	Permit	785-126	Scott and Virginia Kinsler	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12886
Kalamazoo River	Allegan/Calkins	Permit	785-127	Douglas and Tiffany Kinney	Dock	T2N, R14W, Sec 22	NA	12888

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-128	Helen M Fess	Dock	T2N, R14W, Sec 23	NA	12887
Kalamazoo River	Allegan/Calkins	Permit	785-129	Frank and Josephine Prehm	Dock	T2N, R14W, Sec 24	NA	12889
Kalamazoo River	Allegan/Calkins	Permit	785-13	Thomas E Kunetz	Dock, Stairway, Deck	T2N, R14W, Sec 14	NA	12789
Kalamazoo River	Allegan/Calkins	Permit	785-130	Janice Evans	Dock, Seawall, Stairs	T2N, R14W, Sec 14	NA	12891
Kalamazoo River	Allegan/Calkins	Permit	785-131	George W and Donna L Presler	Dock, Seawall	T2N, R14W, Sec 15	NA	12890
Kalamazoo River	Allegan/Calkins	Permit	785-132	Nancy Poore and Christine Johnson	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12892
Kalamazoo River	Allegan/Calkins	Permit	785-133	Kenneth E Willyard	Dock	T2N, R13W, Sec 19	NA	12893
Kalamazoo River	Allegan/Calkins	Permit	785-134	Robert and Nancy Kurth	Dock	T2N, R14W, Sec 22	NA	12894

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-135A	Jason Bowen	Seawall, Dock, Stairs	T2N, R14W, Sec 14	NA	12895
Kalamazoo River	Allegan/Calkins	Permit	785-136A	Leo and Brigitte Postel	Dock, Seawall, Stairs	T2N, R14W, Sec 14	NA	12896
Kalamazoo River	Allegan/Calkins	Permit	785-137	Philip C and M Joan Cowen	Dock, Seawall	T2N, R14W, Sec 22	NA	12897
Kalamazoo River	Allegan/Calkins	Permit	785-138	Nethercutt Pointe Property Owners Association c/o Alan Hayes	Dock	T2N, R14W, Sec 22	NA	12898
Kalamazoo River	Allegan/Calkins	Permit	785-139	Roger and Nancy Smalla	Dock, Seawall	T2N, R13W, Sec 19	NA	12899
Kalamazoo River	Allegan/Calkins	Permit	785-14	William and Amy L Kellow Trustee	Dock, Seawall	T2N, R14W, Sec 22	NA	12790
Kalamazoo River	Allegan/Calkins	Permit	785-140	Erick and Susan Johnson	Dock, Stairway, Deck to Dock	T2N, R14W, Sec 14	NA	12900

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-141	Peter Dippolito	Dock	T2N, R13W, Sec 19	NA	12901
Kalamazoo River	Allegan/Calkins	Permit	785-142	William and Alie Hart	Dock	T2N, R13W, Sec 19	NA	12902
Kalamazoo River	Allegan/Calkins	Permit	785-143	Francis and Patricia Stuchly	Dock, Seawall	T2N, R14W, Sec 22	NA	12903
Kalamazoo River	Allegan/Calkins	Permit	785-144	Daniel Esposito	Dock, Seawall, Stairway	T2N, R14W, Sec 23	NA	12904
Kalamazoo River	Allegan/Calkins	Permit	785-145	John R Cantwell, Sr	Dock	T2N, R14W, Sec 13	NA	12905
Kalamazoo River	Allegan/Calkins	Permit	785-146	Rick and Bonnie Randall	Seawall, Dock and Stairs	T2N, R14W, Sec 22	NA	12906
Kalamazoo River	Allegan/Calkins	Permit	785-147	Daniel and Vivian Coffey	Dock	T2N, R13W, Sec 18 & 19	NA	12907
Kalamazoo River	Allegan/Calkins	Permit	785-148	Donald E and Linda R Sloat	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12908

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-149	Wojciech Nowakowski	Dock, Stairway	T2N, R14W, Sec 13	NA	12909
Kalamazoo River	Allegan/Calkins	Permit	785-15	Joyce Bolinger	Dock	T2N, R14W, Sec 14	NA	12791
Kalamazoo River	Allegan/Calkins	Permit	785-150	Lucia Timmerman	Dock	T2N, R13W, Sec 19	NA	12924
Kalamazoo River	Allegan/Calkins	Permit	785-151	Water's Pointe Condominium c/o Daniel Schnitta	Dock, Stairway	T2N, R14W, Sec 24	NA	12925
Kalamazoo River	Allegan/Calkins	Permit	785-152	Donald and Stacey Harbour	Dock, Seawall, Stairs	T2N, R14W, Sec 24	NA	12926
Kalamazoo River	Allegan/Calkins	Permit	785-155	Antony Crofts and Christine Yerkes	Dock, Seawall, Stairway, Boat House	T2N, R14W, Sec 13	NA	12927
Kalamazoo River	Allegan/Calkins	Permit	785-156	Carl J Busch	Dock, Seawall and Stairway	T2N, R14W, Sec 22	NA	12928
Kalamazoo River	Allegan/Calkins	Permit	785-157	Steven Ostrowski, Treasurer, Bay Shores	Dock and Stairway	T2N, R14W, Sec 24	NA	12930

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
				Condominium Association				
Kalamazoo River	Allegan/Calkins	Permit	785-158	Jeffrey Leef	Dock and Stairway	T2N, R14W, Sec 13	NA	12929
Kalamazoo River	Allegan/Calkins	Permit	785-159	Gregory S and Mary M Nawrocki	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12931
Kalamazoo River	Allegan/Calkins	Permit	785-16	Daniel A and Ann L Flynn	Dock, Seawall	T2N, R14W, Sec 13	NA	12792
Kalamazoo River	Allegan/Calkins	Permit	785-160	Steve Johnson	Dock, Seawall, Stairway	T2N, R14W, Sec 15	NA	12933
Kalamazoo River	Allegan/Calkins	Permit	785-161	Ross and Sue Hansen	Dock, Stairway	T2N, R13W, Sec 19 and 20	NA	12932
Kalamazoo River	Allegan/Calkins	Permit	785-162	John Moser	Dock	T2N, R13W, Sec 20	NA	12934
Kalamazoo River	Allegan/Calkins	Permit	785-163	Jordan Rosenblum	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12935

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-164	Edwin Thornley	Dock, Stairway	T2N, R14W, Sec 22	NA	12937
Kalamazoo River	Allegan/Calkins	Permit	785-166	Brian Kasmer	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12936
Kalamazoo River	Allegan/Calkins	Permit	785-167	Randall and Carol Sneller	Dock	T2N, R13W, Sec 19 and 20	NA	12938
Kalamazoo River	Allegan/Calkins	Permit	785-168	Arthur and Julie Alexander	Dock and Seawall	T2N, R13W, Sec 24	NA	12939
Kalamazoo River	Allegan/Calkins	Permit	785-169	David and Roween Panning	Dock and Stairway	T2N, R14W, Sec 14	NA	12940
Kalamazoo River	Allegan/Calkins	Permit	785-17	Kenneth D and Kathy J Yonker	Dock	T2N, R14W, Sec 23	NA	12793
Kalamazoo River	Allegan/Calkins	Permit	785-170	Richard and Kristin Stuba	Dock and Stairway	T2N, R14W, Sec 14	NA	12941
Kalamazoo River	Allegan/Calkins	Permit	785-171	Martha Kabbes Hesse	Stairway	T2N, R14W, Sec 14	NA	12942

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-172	Breezy Acres Subdivision Joe Grilli	Dock	T2N, R14W, Sec 14	NA	12943
Kalamazoo River	Allegan/Calkins	Permit	785-173	Tim Miller	Dock, Stairway and Seawall	T2N, R14W, Sec 14	NA	12944
Kalamazoo River	Allegan/Calkins	Permit	785-174	Gwendoline G Dawson	Dock and Seawall	T2N, R14W, Sec 22	NA	12945
Kalamazoo River	Allegan/Calkins	Permit	785-175	David R and Cynthia A Krause	Dock and Seawall	T2N, R14W, Sec 22	NA	12946
Kalamazoo River	Allegan/Calkins	Permit	785-176	Neil and Cecilia Norcross	Dock	T2N, R13W, Sec 20	NA	12947
Kalamazoo River	Allegan/Calkins	Permit	785-177	Craig VanMelle	Dock, Stairway	T2N, R14W, Sec 14	NA	12948
Kalamazoo River	Allegan/Calkins	Permit	785-178	Holger and Lucie Jerch	Dock, Stairway	T2N, R14W, Sec 14	NA	12949
Kalamazoo River	Allegan/Calkins	Permit	785-179	Roderick Matson	Dock	T2N, R13W, Sec 20	NA	12950

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-18	Timothy W and Susan L Heffner	Dock	T2N, R14W, Sec 23	NA	12794
Kalamazoo River	Allegan/Calkins	Permit	785-180	Larry Stein	Dock, Seawall, Stairway	T2N, R14W, Sec 23	NA	12951
Kalamazoo River	Allegan/Calkins	Permit	785-181	Heather Upchurch	Dock, Seawall, Boat Lift	T2N, R14W, Sec 22	NA	12952
Kalamazoo River	Allegan/Calkins	Permit	785-182	Ronald E and Christine D Groen	Dock, Stairs	T2N, R13W, Sec 19	NA	12954
Kalamazoo River	Allegan/Calkins	Permit	785-183	Dave Theisinger and Jim Kenny	Dock, Stairs	T2N, R14W, Sec 23	NA	12953
Kalamazoo River	Allegan/Calkins	Permit	785-184	Kathryn Dwyer	Dock, Seawall	T2N, R14W, Sec 14	NA	12956
Kalamazoo River	Allegan/Calkins	Permit	785-185	John and Carol Adamitis	Dock, Stairway, Jet Ski Lift, Seawall/Rip-Rap	T2N, R14W, Sec 24	NA	12961
Kalamazoo River	Allegan/Calkins	Permit	785-186	Jeff Crisp	Dock, Stairway, Seawall	T2N, R14W, Sec 14	NA	12955

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-187	Creg Kugelard	Dock, Stairway, Seawall	T2N, R14W, Sec 23	NA	12957
Kalamazoo River	Allegan/Calkins	Permit	785-188	Barbara Cuson	Dock, Stairway, Seawall	T2N, R14W, Sec 14	NA	12958
Kalamazoo River	Allegan/Calkins	Permit	785-189	William J. Reidy	Dock, Stairway	T2N, R14W, Sec 23	NA	12959
Kalamazoo River	Allegan/Calkins	Permit	785-19	Louis and Barbara Thierwechter	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12795
Kalamazoo River	Allegan/Calkins	Permit	785-190	Daniel J Schnitta	Dock, Stairway	T2N, R14W, Sec 16	NA	12960
Kalamazoo River	Allegan/Calkins	Permit	785-191	Roxanne Saylor and Caroline Soodek	Dock	T2N, R13W, Sec 19	NA	12962
Kalamazoo River	Allegan/Calkins	Permit	785-192	George and Kathleen Bauer	Dock, Stairway	T2N, R14W, Sec 24	NA	12963
Kalamazoo River	Allegan/Calkins	Permit	785-193	James and Susan Croy	Dock, Stairway, Seawall	T2N, R14W, Sec 14	NA	12964

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-194	Robert and Christine Finnigan	Dock, Stairway, Seawall	T2N, R14W, Sec 22	NA	12966
Kalamazoo River	Allegan/Calkins	Permit	785-195	Sean and Cheryl Jessurun	Dock, Seawall	T2N, R14W, Sec 24	NA	12965
Kalamazoo River	Allegan/Calkins	Permit	785-196	Michael and Ann Roth	Dock, Seawall, Stairs	T2N, R14W, Sec 22	NA	12967
Kalamazoo River	Allegan/Calkins	Permit	785-197	Vicki Tornga and Bob Hopkins	Dock	T2N, R14W, Sec 13	NA	12968
Kalamazoo River	Allegan/Calkins	Permit	785-198	William and Ellen Lasiewicz	Dock, Seawall and Stairs	T2N, R14W, Sec 15	NA	12969
Kalamazoo River	Allegan/Calkins	Permit	785-199	Michael Wojcik	Dock, Seawall and Stairs	T2N, R14W, Sec 22	NA	12970
Kalamazoo River	Allegan/Calkins	Permit	785-20	Craig and Diane Allen	Dock, Seawall, Stairs, Deck	T2N, R14W, Sec 22	NA	12796
Kalamazoo River	Allegan/Calkins	Permit	785-200	James and Lynn Kenny	Dock, Seawall and Stairs	T2N, R14W, Sec 23	NA	12980

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-201	Russ and Elaine Gerbers	Docks (2)	T2N, R13W, Sec 19	NA	12971
Kalamazoo River	Allegan/Calkins	Permit	785-202	Gary Brakoniecki	Dock, Stairway	T2N, R14W, Sec 14	NA	12972
Kalamazoo River	Allegan/Calkins	Permit	785-203	Donald and Sue Pabis	Dock, Stairway, Seawall, Boat Left	T2N, R14W, Sec 24	NA	12974
Kalamazoo River	Allegan/Calkins	Permit	785-204	Sean and Kim Vandevooren	Dock and Stairway	T2N, R13W, Sec 19 and 20	NA	12973
Kalamazoo River	Allegan/Calkins	Permit	785-205	Vicki Vannette	Dock, Seawall and Stairway	T2N, R13W, Sec 19 and 20	NA	12975
Kalamazoo River	Allegan/Calkins	Permit	785-206	Peter Ahlstrom and Lex Arden	Dock, Stairway and Seawall	T2N, R14W, Sec 14	NA	12976
Kalamazoo River	Allegan/Calkins	Permit	785-207	Tracy and Jeri Titman	Shared Dock	T2N, R14W, Sec 13	NA	12977
Kalamazoo River	Allegan/Calkins	Permit	785-208	Carmen Capriola	Dock	T2N, R13W,	NA	12978

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
						Sec 19 and 20		
Kalamazoo River	Allegan/Calkins	Permit	785-209	Joseph Conti	Dock, Seawall, Stairs	T2N, R14W, Sec 16	NA	12979
Kalamazoo River	Allegan/Calkins	Permit	785-21	Beverly Gibson Trust	Dock, Seawall	T2N, R14W, Sec 13	NA	12797
Kalamazoo River	Allegan/Calkins	Permit	785-210	Chase Hardin	Dock, Boardwalk Steps/Platform	T2N, R14W, Sec 13	NA	12981
Kalamazoo River	Allegan/Calkins	Permit	785-211	Dave TerHaar	Dock, Seawall	T2N, R13W, Sec 19	NA	12982
Kalamazoo River	Allegan/Calkins	Permit	785-212	Robert and Lynda Speaker	Dock, Seawall, Stairs	T2N, R14W, Sec 15	NA	12983
Kalamazoo River	Allegan/Calkins	Permit	785-213	Cory and Kim Vantil	Dock, Seawall, Stairs	T2N, R14W, Sec 24	NA	12984
Kalamazoo River	Allegan/Calkins	Permit	785-214	Marcin Sciubisz	Dock, Seawall, Stairs	T2N, R14W, Sec 16	NA	12985

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-215	Mark Zabloudil	Dock	T2N, R14W, Sec 24	NA	12986
Kalamazoo River	Allegan/Calkins	Permit	785-216	Ryen Sack	Seawall	T2N, R14W, Sec 24	NA	12987
Kalamazoo River	Allegan/Calkins	Permit	785-217	John and Layla Groleau	Seawall, Dock and Stairs	T2N, R14W, Sec 22	NA	12989
Kalamazoo River	Allegan/Calkins	Permit	785-218	Dirk and Ann VanZalen	Seawall, Dock and Stairs	T2N, R14W, Sec 16	NA	12988
Kalamazoo River	Allegan/Calkins	Permit	785-219	Matthew and Christina Hayes	Seawall, Dock and Stairs	T2N, R14W, Sec 14	NA	12992
Kalamazoo River	Allegan/Calkins	Permit	785-22	Ronald and Diane Anderson - Trustees- Andersen Trust	Dock	T2N, R14W, Sec 13	NA	12798
Kalamazoo River	Allegan/Calkins	Permit	785-221	Jill and Todd Meredith	Seawall, Dock and Stairs	T2N, R14W, Sec 16	NA	12990

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-222	Mary Palmisano	Dock	T2N, R13W, Sec 19	NA	12991
Kalamazoo River	Allegan/Calkins	Permit	785-223	Rick Birdsley	Dock, Seawall, Stairs	T2N, R14W, Sec 16	NA	12993
Kalamazoo River	Allegan/Calkins	Permit	785-224	James Gibson	Dock, Seawall, Stairs	T2N, R14W, Sec 14	NA	12994
Kalamazoo River	Allegan/Calkins	Permit	785-225	William Wood	Dock	T2N, R14W, Sec 14	NA	12995
Kalamazoo River	Allegan/Calkins	Permit	785-226	Marcin Sciubisz	Dock, Seawall	T2N, R14W, Sec 16	NA	12996
Kalamazoo River	Allegan/Calkins	Permit	785-227	William and Kathleen Weibeler	Seawall	T2N, R14W, Sec 23	NA	12997
Kalamazoo River	Allegan/Calkins	Permit	785-228	Joan Cowen	Dock, Seawall, Stairs	T2N, R14W, Sec 22	NA	12998
Kalamazoo River	Allegan/Calkins	Permit	785-229	Allen Lynema	Seawall, Dock	T2N, R13W, Sec 20	NA	12999

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-23	Dawn Rowan	Seawall, Dock and Stairs	T2N, R14W, Sec 22	NA	12799
Kalamazoo River	Allegan/Calkins	Permit	785-231	Carla Teasdale	Seawall, Dock, Stairs	T2N, R14W, Sec 24	NA	13000
Kalamazoo River	Allegan/Calkins	Permit	785-232	Joseph Grilli	Seawall, Dock, Stairs	T2N, R14W, Sec 14	NA	13001
Kalamazoo River	Allegan/Calkins	Permit	785-233	Sean Nelson	Dock	T2N, R14W, Sec 13	NA	13002
Kalamazoo River	Allegan/Calkins	Permit	785-24	Ron Klingenberg	Dock	T2N, R14W, Sec 15	NA	12800
Kalamazoo River	Allegan/Calkins	Permit	785-25	Arthur Ostrow	Dock, Seawall and Stairway	T2N, R14W, Sec 22	NA	12801
Kalamazoo River	Allegan/Calkins	Permit	785-26	Bruce and Marcia Enselman	Dock, Seawall, Stairway	T2N, R14W, Sec 13	NA	12802
Kalamazoo River	Allegan/Calkins	Permit	785-27	Joseph Conti	Dock, Seawall, Stairs	T2N, R14W, Sec 14	NA	12803

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-28	Chuck and Joyce Gruberman	Dock, Seawall and Shore Station	T2N, R14W, Sec 14	NA	12805
Kalamazoo River	Allegan/Calkins	Permit	785-29	Douglas and Shuyaan Wickens	Dock	T2N, R14W, Sec 22	NA	12804
Kalamazoo River	Allegan/Calkins	Permit	785-30	Jay and Darlene Balaban	Dock	T2N, R14W, Sec 14	NA	12806
Kalamazoo River	Allegan/Calkins	Permit	785-31	Karen and Geno Walker	Dock, Seawall	T2N, R14W, Sec 24	NA	12807
Kalamazoo River	Allegan/Calkins	Permit	785-32	John and Mark Zick	Dock, Stairs, Seawall	T2N, R14W, Sec 14	NA	12809
Kalamazoo River	Allegan/Calkins	Permit	785-33	Ivan and Patricia Bodensteiner	Dock	T2N, R14W, Sec 13	NA	12808
Kalamazoo River	Allegan/Calkins	Permit	785-34	David R and Bette C Thompson	Dock	T2N, R14W, Sec 13	NA	12810
Kalamazoo River	Allegan/Calkins	Permit	785-35	Helen Kurrasch	Dock	T2N, R14W, Sec 13	NA	12811

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-36	Gatis D and Mara A Lusis	Dock	T2N, R14W, Sec 24	NA	12812
Kalamazoo River	Allegan/Calkins	Permit	785-38	Laverne and Esther J Lampen	Dock	T2N, R14W, Sec 13	NA	12813
Kalamazoo River	Allegan/Calkins	Permit	785-39	Robert E and Judy A Lawson	Dock	T2N, R13W, Sec 19	NA	12814
Kalamazoo River	Allegan/Calkins	Permit	785-40	Norbert F and Carol F Doeringer	Dock and Stairway	T2N, R14W, Sec 13	NA	12815
Kalamazoo River	Allegan/Calkins	Permit	785-41	Mark and Gail Martis	Dock	T2N, R14W, Sec 22	NA	12817
Kalamazoo River	Allegan/Calkins	Permit	785-42	Roger and Patricia Van Dam	Dock	T2N, R14W, Sec 15	NA	12816
Kalamazoo River	Allegan/Calkins	Permit	785-43	Stephen A Kastran	Dock	T2N, R14W, Sec 13	NA	12818
Kalamazoo River	Allegan/Calkins	Permit	785-44	Marvin Darling	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12819

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-45	Yousuf and Carole Sarmast	Dock, Seawall and Stairway	T2N, R14W, Sec 14	NA	12821
Kalamazoo River	Allegan/Calkins	Permit	785-46	William C and Susan J Turner	Dock and Stairway	T2N, R13W, Sec 19	NA	12820
Kalamazoo River	Allegan/Calkins	Permit	785-47	Tonia Willekes	Dock and Stairs	T2N, R14W, Sec 23	NA	12822
Kalamazoo River	Allegan/Calkins	Permit	785-48	Ann Nolan, Trustee William I Nolan, Sr Trust	Dock and Stairway	T2N, R14W, Sec 13	NA	12823
Kalamazoo River	Allegan/Calkins	Permit	785-49	Ronald and Jacqueline Feley	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12824
Kalamazoo River	Allegan/Calkins	Permit	785-50	William E and Arlene J Hamilton	Dock, Seawall and Stairway	T2N, R13W, Sec 19	NA	12826
Kalamazoo River	Allegan/Calkins	Permit	785-51	Ronald and Dolores Marzec	Dock, Seawall and Stairway	T2N, R14W, Sec 14	NA	12825
Kalamazoo River	Allegan/Calkins	Permit	785-52	John and Nancy Molenstra	Dock and Stairway	T2N, R14W, Sec 22	NA	12827

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-53	Jalil Rizqallah	Dock and Seawall	T2N, R13W, Sec 18	NA	12828
Kalamazoo River	Allegan/Calkins	Permit	785-54	James Michael Tingstad	Dock, Seawall and Stairway	T2N, R14W, Sec 15	NA	12829
Kalamazoo River	Allegan/Calkins	Permit	785-55	Phillip and Sharon Zigulich	Dock, Seawall, Stairway, Boat House	T2N, R14W, Sec 22	NA	12830
Kalamazoo River	Allegan/Calkins	Permit	785-56	Dorothy M Hanson	Seawall, Stairway and Ramp	T2N, R13W, Sec 19	NA	12833
Kalamazoo River	Allegan/Calkins	Permit	785-57	Laubscher Cottage, LLC	Dock, Seawall and Stairway	T2N, R14W, Sec 14	NA	12832
Kalamazoo River	Allegan/Calkins	Permit	785-58	Kathleen A Welton and Barbara Navarro	Dock	T2N, R14W, Sec 22	NA	12831
Kalamazoo River	Allegan/Calkins	Permit	785-59	James and Diana Merleau	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12835
Kalamazoo River	Allegan/Calkins	Permit	785-60	Dominick P Coco	Dock, Seawall, Stairway	T2N, R13W, Sec 19	NA	12836

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-61	Tim and Diane Wilcox	Stairway and Dock	T2N, R13W, Sec 19, 20	NA	12834
Kalamazoo River	Allegan/Calkins	Permit	785-62	William and Joy Zdeblick	Dock, Deck, Seawall, Stairway	T2N, R14W, Sec 23	NA	12839
Kalamazoo River	Allegan/Calkins	Permit	785-63	Gwendoline Dawson	Deck, Seawall, Stairway	T2N, R14W, Sec 22	NA	12837
Kalamazoo River	Allegan/Calkins	Permit	785-64	Stanley Augustyniak	Dock, Stairway, Boat Hoist	T2N, R13W, Sec 19	NA	12838
Kalamazoo River	Allegan/Calkins	Permit	785-65	Kelly and Susan Jones	Stairway, Dock, Seawall, Landscaping	T2N, R14W, Sec 14	NA	12840
Kalamazoo River	Allegan/Calkins	Permit	785-67	David S and Kathleen B Armstrong	Dock, Seawall, Stairway, Boat Lift	T2N, R14W, Sec 22	NA	12841
Kalamazoo River	Allegan/Calkins	Permit	785-68	Bruce and Sharon Moulenbelt	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12842
Kalamazoo River	Allegan/Calkins	Permit	785-70	Pat and Mary Kiella	Dock, Seawall, Stairway, Deck	T2N, R14W, Sec 23	NA	12843

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-71	Gerald L Matt	Dock	T2N, R14W, Sec 13	NA	12844
Kalamazoo River	Allegan/Calkins	Permit	785-72	Catherine and Michael McCarthy	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12845
Kalamazoo River	Allegan/Calkins	Permit	785-73	Heather C Upchurch	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12846
Kalamazoo River	Allegan/Calkins	Permit	785-74	Richard J and Sara J Tucker	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12847
Kalamazoo River	Allegan/Calkins	Permit	785-75	Patrick Heatherly	Dock and Stairway	T2N, R14W, Sec 14	NA	12848
Kalamazoo River	Allegan/Calkins	Permit	785-76	Kurt Moore	Dock and Stairway	T2N, R14W, Sec 13	NA	12849
Kalamazoo River	Allegan/Calkins	Permit	785-77	Alvin and Joan Stefanski	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12850
Kalamazoo River	Allegan/Calkins	Permit	785-78	Edward and Mary Miller	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12851

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-79	John and Marjorie Sucansky	2 Docks	T2N, R14W, Sec 13	NA	12852
Kalamazoo River	Allegan/Calkins	Permit	785-80	Todd and Ruth Klepitsch	Dock, Seawall, Stairway	T2N, R14W, Sec 22	NA	12853
Kalamazoo River	Allegan/Calkins	Permit	785-81	Paul H and Marilynn C Rydlund	Dock and Seawall	T2N, R14W, Sec 24	NA	12854
Kalamazoo River	Allegan/Calkins	Permit	785-82	William R Chaney	Dock	T2N, R14W, Sec 13	NA	12855
Kalamazoo River	Allegan/Calkins	Permit	785-83	Kay Ruff and Steve Lewis	Dock and Stairway	T2N, R14W, Sec 19	NA	12856
Kalamazoo River	Allegan/Calkins	Permit	785-84	S M Joelson	Dock and Stairway	T2N, R14W, Sec 13	NA	12857
Kalamazoo River	Allegan/Calkins	Permit	785-85	Michael J Schaap	Dock and Stairway	T2N, R14W, Sec 23	NA	12858
Kalamazoo River	Allegan/Calkins	Permit	785-86	Christina Fitzgerald	Dock, Seawall, Stairway	T2N, R14W, Sec 14	NA	12859

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-87	David E Mason	Dock, Seawall, Stairway	T2N, R13W, Sec 19	NA	12860
Kalamazoo River	Allegan/Calkins	Permit	785-88	Thomas R and Victoria M Moran	Dock, Seawall, Stairway/Tram	T2N, R13W, Sec 19	NA	12861
Kalamazoo River	Allegan/Calkins	Permit	785-89	William A VanDril	Dock	T2N, R14W, Sec 22	NA	12862
Kalamazoo River	Allegan/Calkins	Permit	785-90	Joseph T and Mary S Weglowski	Dock and Stairway	T2N, R14W, Sec 24	NA	12863
Kalamazoo River	Allegan/Calkins	Permit	785-91	Richard and Sharon Nash	Dock	T2N, R14W, Sec 13	NA	12864
Kalamazoo River	Allegan/Calkins	Permit	785-92	John Jones	Dock, Seawall and Stairway	T2N, R14W, Sec 14	NA	12865
Kalamazoo River	Allegan/Calkins	Permit	785-93	Thomas and Jill Kulpa	Seawall, Dock and Stairs	T2N, R14W, Sec 22	NA	12867
Kalamazoo River	Allegan/Calkins	Permit	785-93A	Robert and Lori Cudone	Seawall, Dock and Stairs	T2N, R14W, Sec 22	NA	12867

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Kalamazoo River	Allegan/Calkins	Permit	785-94	Vahakn and Barbara Knarian Trust	Dock, Stairway, Deck, Electrical Outlet	T2N, R14W, Sec 15	NA	12866
Kalamazoo River	Allegan/Calkins	Permit	785-95	James Flannery and Carol Zigulich	Dock and Stairway	T2N, R14W, Sec 14	NA	12868
Kalamazoo River	Allegan/Calkins	Permit	785-96	Charles Strizak	Dock, Seawall, Stairway	T2N, R13W, Sec 19	NA	12870
Kalamazoo River	Allegan/Calkins	Permit	785-97	Elizabeth Kobylarczyk	Dock, Stairway	T2N, R14W, Sec 23	NA	12871
Kalamazoo River	Allegan/Calkins	Permit	785-98	Christopher J Brown	Dock and Stairway	T2N, R14W, Sec 24	NA	12872
Kalamazoo River	Allegan/Calkins	Permit	785-99	Gregory and Maria Brown	Dock, Seawall, Stairway	T2N, R14W, Sec 13	NA	12872
Manistee River (*)	Hodenpyl	License	1599-01	Brian Armstrong et al	Group Dock	T23N, R13@ Sec 24	$300.00	9518
Manistee River (*)	Hodenpyl	License	2599-02	William M. Kelly, et al	Group Dock	T23N, R12W Sec 30	$350.00	9521

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Manistee River (*)	Hodenpyl	License	2599-08	Lions Club of Mesick	Picnicking, Parking Lot, Veterans Memorial, Fishing Pier, Storage Building, Landscaping, Underground Tanks/Non-Profit Recreation	T23N, R12W, Sec 11	NA	9536
Manistee River (*)	Hodenpyl	License	2599-09	John E. Bliss and Nancy Bliss, d/b/a Burton's Landing	Picnicking, Boating Access, Boat Docks, Underground Tanks/ Recr. Business	T23N, R12W, Sec 29, 30	$1,050.00	9515
Manistee River (*)	Hodenpyl	License	2599-12	Anthony Buttliere	Docking of watercraft and access to Licensed Area/Individual Dock	T23N, R12W, Sec 11	$340.00	9523
Manistee River (*)	Hodenpyl	License	2599-15	North Country Trail Association	Construction, Operation, Maintenance of a non-motorized public trail/Misc. Recreation	T23N, R13W, Sec 25, 24 T23N, R12W, Sec 19, 20, 17, 16, 10, 11, 02	NA	9526
Manistee River (*)	Hodenpyl	License	2599-17	Jerry and Edwina Teachout	Docking of watercraft and access to Licensed Area/Individual Dock	T23N, R12W, Sec 19	$340.00	9530

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Manistee River (*)	Hodenpyl	License	2599-18	Rick and Tammy Grant	Landscaping, gardening, fencing, and continued use of heat pump	T24N, R12W, Sec 36	$140.00	9534
Manistee River (*)	Hodenpyl	License	2599-21	Pat's RV Park	Indemnity & Insurance Provisions, Environmental Indemnity, Campground, Swimming, Picnicking, Boating Access, Marina, Underground Storage Tanks, Docks/ Rec Business	T23N, R12W, Sec 15	$1,600.00	9514
Manistee River (*)	Hodenpyl	License	2599-25	Benzie Manistee Snowbirds	Parking of Vehicles and Snowmobile Trailers	T23N, R12W, Sec 30, T23N R13W, Sec 25	$55.00	9519
Manistee River (*)	Hodenpyl	License	2599-26	Randy and Stacy Brewer	Docking of watercraft w/access to stairs/driveway, Landscaping, Mowing, existing permitted encroachment/Individual Dock	T23N, R12W, Sec 2	$340.00	9524

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Manistee River (*)	Hodenpyl	License	2599-27	Larry Barnes	Docking of watercraft, Licensed Access Area/Individual Dock	T23N, R12W, Sec 10	$340.00	9529
Manistee River (*)	Hodenpyl	License	2599-28	Chris's RV Campground, LLC	Indemnity & Insurance Provisions, Environmental Indemnity, Campground, Boating Access, Underground Storage Tanks, Docks/Rec Business	T23N, R12W, Sec 9, 16	$1,050.00	9532
Manistee River (*)	Hodenpyl	License	2599-29	Chris's RV Campground, LLC	Occupancy of Dwelling House and Outbuildings	T23N, R12W, Sec 16	NA	9516
Manistee River (*)	Hodenpyl	License	2599-30	Gilbert and Jeannie Hall	Landscaping, mowing, temporary storage of person items including a propane tank	T23N R12W, Sec 19	$140.00	9522
Manistee River (*)	Hodenpyl	License	2599-32	Natalie Totzkay	Docking of watercraft, Licensed Access Area/Individual Dock	T23N, R12W, Sec 10	$340.00	9528
Manistee River (*)	Hodenpyl	License	2599-33	Kenneth Mlcek	Docking of watercraft, Licensed Access Area/Individual Dock	T23N, R13W, Sec 24	$340.00	9533
Manistee River (*)	Hodenpyl	License	2599-34	Danielle Lewis	Docking of watercraft, Licensed Access Area/Individual Dock	T23N, R12W, Sec 10	$340.00	9535

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Manistee River (*)	Tippy	License	2580-01	Norman Township	Boating Access Site	T21N, R13W, Sec 5	NA	9569
Manistee River (*)	Tippy	License	2580-02	The United States of America, Dept of Interior, Fish and Wildlife Service	Installing, Maintaining and removal of traps for Sea Lamprey Study/Gov't Non-Rec	T22N, R13W, Sec 31 T22N, R14W, Sec 36	NA	9566
Manistee River (*)	Tippy	License	2580-05	Jeffrey L Fisher d/b/a Camp Mana-Pine	Campground, Picnicking, Marina, Underground Tanks & Docks/Rec Business	T21N, R13W, Sec 5, 6	$1,050.00	9567
Manistee River (*)	Tippy	License	2580-12	Steve Bussell, d/b/a Loomis Landing Campground & Marina LLC	Campground, Picnicking, Boating Access, Marina, Underground Tanks & Docks/Rec Business	T21N, R13W, Sec 8	$1,050.00	9568
Manistee River (*)	Tippy	Permit		Eastern Michigan University	For monitoring bat populations on said land (expires December 31, 2026)	Within boundary of Tippy Project	NA	12077
Muskegon River (*)	Croton	License	2468-02	Yvonne Albright	Boat Dock	T12N, R11W, Sec 17	$250.00	9397

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Croton	License	2468-03	Gary and Mary L Robinson	Boat Dock	T12N, R11W, Sec 17	$340.00	9401
Muskegon River (*)	Croton	License	2468-06	Gary Delange, et al	Group Dock	T12N, R11W, Sec 17	$350.00	9405
Muskegon River (*)	Croton	License	2468-08	Croton Township	Boat Access/Non-profit Recr.	T12N, R11W, Sec 7, 17, 18	NA	9403, 9406
Muskegon River (*)	Croton	License	2468-09	The United States of America, Dept of Interior, Fish and Wildlife Service	Installing, maintaining and removal of two steel wire fish traps, used for sea lamprey study/ Gov't Non-Rec	T12N, R11W, Sec 18	NA	9396
Muskegon River (*)	Croton	License	2468-10	Nathan and Patricia Weber	Docking of Watercraft and access to licensed area/Individual Dock	T12N, R11W, Sec 27	$340.00	9400
Muskegon River (*)	Croton	License	2468-11	Duane DuChemin	Docking of Watercraft and access to licensed area/Individual Dock	T12N, R11W, Sec 18	$340.00	9404
Muskegon River (*)	Croton	License	2468-17	Richard Dill and Rory Dill	Landscaping and storage of temporary personal property items	T12N, R11W, Sec 7	$140.00	9398

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Croton	License	2468-22	Simeon Gould, DBA CB Trading Post Company	Indemnity and Insurance Provisions, Environmental Indemnity, Marina, Docks, Underground Tanks, Landscaping	T12N, R11W, Sec 17	$1,050.00	9402
Muskegon River (*)	Hardy	License	2452-01	Terry and Janet Westfield	Encroachment of movable Storage Building, small personal property items and Landscaping	T13N, R11W, Sec 14	$140.00	9442
Muskegon River (*)	Hardy	License	2452-04	Robert and Susan DeRuiter, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9447
Muskegon River (*)	Hardy	License	2452-05	George Siple, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9453
Muskegon River (*)	Hardy	License	2452-06	Richard Snavley, et al	Group Dock	T14N, R10W, Sec 21	$350.00	9457
Muskegon River (*)	Hardy	License	2452-09	Larry F Staffen	Dock for Individual Watercraft, Access Stairway, Encroachment of Patio, Landscaping/Individual Dock	T14N, R10W, Sec 21	$340.00	9462

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-100	John and Lori Dehaan	Docking of watercraft and Licensed access area/Individual Dock	T14N, R10W, Sec 21	$340.00	9467
Muskegon River (*)	Hardy	License	2452-102	Larry Hartzell	Landscaping	T14N, R10W, Sec 21	$140.00	9473
Muskegon River (*)	Hardy	License	2452-103	Larry Hartzell	Boat Dock	T14N, R10W, Sec 21	$340.00	9478
Muskegon River (*)	Hardy	License	2452-105	Big Bend Property Owners Association	Indemnity & Insurance Provisions, Environmental Indemnity, Picnicking, Boat Docks	T13N, R11W, Sec 12, 13	$1,800.00	9481
Muskegon River (*)	Hardy	License	2452-108	Jennifer and Gene Mezeske	Landscaping, Mowing and Storage of temporary, removable personal items	T14N, R10W, Sec 21	$140.00	12873
Muskegon River (*)	Hardy	License	2452-109	Jennifer and Gene Mezeske	Docking of watercraft and Licensed access area/Individual Dock	T14N, R10W, Sec 21	$340.00	12874
Muskegon River (*)	Hardy	License	2452-11	Fred Droski, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9491

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-12	Larry Koltak, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9496
Muskegon River (*)	Hardy	License	2452-13	Michael Hammond, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9501
Muskegon River (*)	Hardy	License	2452-14	Thomas Dombrowski, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9506
Muskegon River (*)	Hardy	License	2452-18	Michael Hammond	Landscaping and Storage of temporary personal property items	T13N, R11W, Sec 1	$140.00	9448
Muskegon River (*)	Hardy	License	2452-19	Herman Scholten	Dockage of watercraft/Boat Dock	T14N, R10W, Sec 21	$340.00	9452
Muskegon River (*)	Hardy	License	2452-20	Mr. Harris Rotman	Dockage of watercraft/Boat Dock	T14N, R10W, Sec 21	$340.00	9458
Muskegon River (*)	Hardy	License	2452-21	Jim and Kim Zawacki, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9463
Muskegon River (*)	Hardy	License	2452-23	Robert G Ringler	Landscaping and Storage of temporary personal property items	T13N, R11W, Sec 1	$140.00	9477

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-24	William L Warber	Landscaping and Driveway Encroachment	T13N, R11W, Sec 14	$140.00	9482
Muskegon River (*)	Hardy	License	2452-25	Hardy Dam Consumers Employees Club	Campground, Swimming, Picnicking, Boating Access, Boat Docks/Club Recreation	T13N, R11N, Sec 15	$1,100.00	9489
Muskegon River (*)	Hardy	License	2452-26	Kenneth McNees, d/b/a K&K Landing LLC	Boating Access, Underground Tanks, Docks, Trailer/Dock Rental, Boat Dock	T13N, R11W, Sec 22	$1,200.00	9494
Muskegon River (*)	Hardy	License	2452-27	MDNR	Camping, Boating, Swimming, Picnicking	T13N, R11W	NA	9498
Muskegon River (*)	Hardy	License	2452-29A	William Stubblefield	Landscaping, Gardening, Access Driveway, Parking Vehicle	T13N, R11W, Sec 1	$140.00	9513
Muskegon River (*)	Hardy	License	2452-30	Alan Jutila	Watercraft Dockage/Boat Dock	T14N, R10W, Sec 21	$340.00	9440
Muskegon River (*)	Hardy	License	2452-31	Muskegon River Boat Club, Inc	Picnicking, Marina, Boat Docks/Club or Association	T14N, R10E, Sec 32, 29, 30	$1,800.00	9444
Muskegon River (*)	Hardy	License	2452-32	Mark's Painting and	Swimming, Picnicking, Boating Access,	T13N, R11W,	$1,800.00	9451

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
				Decorating, Inc, d/b/a Sportsman Park Campground and Boat Slips	Underground Tanks and Docks/Boat Dock Rental, Boat Launch, Picnic Area	Sec 16, 21		
Muskegon River (*)	Hardy	License	2452-33	Wayne W Sarns, Wenona K Sarns, and Sherry Kay Krum, d/b/a Sarns Resort	Swimming, Picnicking, Boating Access, Underground Tanks and Docks/Boat Dock Rental, Boat Launch, Picnic Area	T13N, R11W, Sec 12	$1,800.00	9455
Muskegon River (*)	Hardy	License	2452-34	Glen and Lori Desjardins	Boating Access, Underground Tanks and 28 Dock	T13N, R11W, Sec 27	$800.00	9460
Muskegon River (*)	Hardy	License	2452-37	Hardy Oaks, Inc	Marina, Underground Tanks and Docks/Association	T13N, R11W, Sec 14	$1,050.00	9465
Muskegon River (*)	Hardy	License	2452-38	Carey Farms	General Crop Farming	T13N, R10W, Sec 6	$375.00	9471
Muskegon River (*)	Hardy	License	2452-39	Larry Koltak	Landscaping, Storage of two small, temporary storage sheds and small personal property items	T13N, R11W, Sec 1	$140.00	9476

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-40	Harris Rotman	Landscaping and placement of temporary, small personal items	T14N, R10W, Sec 21	$140.00	9483
Muskegon River (*)	Hardy	License	2452-43	Woodruff's Riverside Improvement Association, Inc	Swimming, Picnicking, Boating Access, Marina, Underground Tanks and Docks/Recr Assoc.	T13N, R11W, Sec 14, 15, 22, 23	$1,800.00	9487
Muskegon River (*)	Hardy	License	2452-44	Newaygo Boat Club Inc	Swimming, Picnicking, Boating Access, Marina, Underground Tanks and Docks/ Recr Club	T14N, R10W, Sec 31, 32	$1,600.00	9493
Muskegon River (*)	Hardy	License	2452-45	Birch Bayou Association, Inc.	Marina, Underground Tanks and Boat Docks/ Recr Assoc	T13N, R11W, Sec 12	$1,400.00	9499
Muskegon River (*)	Hardy	License	2452-48	Michael and Marybeth Isaac, et al	Docking of watercraft and access to licensed area/Group Dock	T4N, R10W, Sec 31	$340.00	9504
Muskegon River (*)	Hardy	License	2452-50	Brian and Richard Stubblefield	Docking of watercraft and Licensed access area/Individual Dock	T13N, R11W, Sec 1	$340.00	9509
Muskegon River (*)	Hardy	License	2452-52	Wayne Stubblefield	Docking of watercraft and Licensed access area/Individual Dock	T13N, R11W, Sec 12	$340.00	9512

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-53	Riverguest, LLC	Marina Purposes/Dock/Launch	T14N, R10W, Sec 29	$1,800.00	9439
Muskegon River (*)	Hardy	License	2452-58	Eric Lepley	Docking of watercraft and Licensed access area/Individual Dock	T14N, R10W, Sec 32	$340.00	9446
Muskegon River (*)	Hardy	License	2452-59	Eric Lepley	General Crop Farming	T14N, R10E, Sec 32	$95.00	9449
Muskegon River (*)	Hardy	License	2452-61	Robert L Sanborn	Docking of watercraft and Licensed access area/Individual Dock	T13N, R11W, Sec 28	$340.00	9456
Muskegon River (*)	Hardy	License	2452-62	Jacqueline Swart, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9461
Muskegon River (*)	Hardy	License	2452-64	William LaFollette, et al	Group Dock	T13N, R11W, Sec 15	$350.00	9466
Muskegon River (*)	Hardy	License	2452-67	Mark Huizinga	Docking of watercraft and Licensed access area/Individual Dock	T13N, R11W, Sec 1	$340.00	9470
Muskegon River (*)	Hardy	License	2452-68	William Stubblefield and Wendy Huizinga	Docking of watercraft and access to licensed area/Individual Dock	T13N, R11W, Sec 1	$340.00	9475

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-69	Wade and Angela Douglas, et al	Group Dock	T14N, R10W, Sec 31	$350.00	9480
Muskegon River (*)	Hardy	License	2452-73	Shawn Roberts, et al	Group Dock	T14N, R10W, Sec 29	$525.00	9485
Muskegon River (*)	Hardy	License	2452-74	Daniel Westra	Landscaping and Storage of temporary personal property items	T13N, R11W, Sec 1	$140.00	9490
Muskegon River (*)	Hardy	License	2452-75	Davis Bridge View Condominium Association	Indemnity & Insurance Provisions, Environmental Indemnity, Swimming, Boating Access, Marina, Underground Storage Tanks, Picnicking, Boat Docks/Launch	T14N, R10W, Sec 29, 28	$1,800.00	9492
Muskegon River (*)	Hardy	License	2452-78	Allen and Julie Guthrie d/b/a Stanwood Boat Marina	Boating Access and Boat Docks/Recreation Business	T14N, R10W, Sec 28	$1,800.00	9497
Muskegon River (*)	Hardy	License	2452-79	Larry and Diane Jackson	Docking of watercraft and Licensed access area/Individual Dock	T14N, R10W, Sec 21	$340.00	9502

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-80	Thomas Dombrowski	Landscaping and Storage of temporary personal property items	T13N, R11W, Sec 1	$140.00	9507
Muskegon River (*)	Hardy	License	2452-81	Kenneth and Donna VanIddekinge, et al	Group Dock	T13N, R11W, Sec 12	$350.00	9411
Muskegon River (*)	Hardy	License	2452-82	Charles Thomas	Docking of watercraft and Licensed access area/Individual Dock	T14N, R10W, Sec 21	$340.00	9445
Muskegon River (*)	Hardy	License	2452-83	Charles Thomas	Landscaping, Retaining Walls, Storage of temporary personal property items	T14N, R10W, Sec 21	$140.00	9450
Muskegon River (*)	Hardy	License	2452-85	Patrick Doty, et al	Group Dock	T13N, R11W, Sec 1	$350.00	9454
Muskegon River (*)	Hardy	License	2452-87	Kenneth McNees	Campground, Swimming, Picnicking, Boating Access, Marina, Underground Tanks, Docks/Assoc or Club	T13N, R11W, Sec 22	$1,050.00	9459
Muskegon River (*)	Hardy	License	2452-89	County of Newaygo	Pedestrian Trail	T14N, R10W, Sec 31	$2,500.00	9464

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-91	Jim and Kim Zawacki	Landscaping, Mowing, a Drainfield and Storage of temporary, removable personal items	T13N, R11W, Sec 1	$140.00	9469
Muskegon River (*)	Hardy	License	2452-93	John and Lori DeHaan	Landscaping, Mowing, and Storage of temporary, removable personal items	T14N, R10W, Sec 21	$140.00	9474
Muskegon River (*)	Hardy	License	2452-94	Rollin Reeves and Leisha McCelland	Landscaping, Gardening, a Drainfield, a removable storage building, driveway for access to property and the parking of motor vehicles	T13N, R11W, Sec 1	$140.00	9479
Muskegon River (*)	Hardy	License	2452-95	Katherine Moore	Docking of watercraft and Licensed access area/Individual Dock	T13N, R11W, Sec 12	$340.00	9484
Muskegon River (*)	Hardy	License	2452-96	David and Susan Dwyer	Landscaping, Mowing, Fire-Pit with landscape pavers, Privacy Fence and temporary storage of personal items	T13N, R10W, Sec 18	$140.00	9488
Muskegon River (*)	Hardy	License	2452-97	Ralph and Linda Callear	Landscaping, Gardening, Mowing and temporary storage of personal items	T13N, R10W, Sec 18	$140.00	9495

River	Facility	Agreement Type	Agreement #	Name or Entity	Use/Purpose	Location	Annual Fee (from 2024 Rent spreadsheet)	Data Room ID#
Muskegon River (*)	Hardy	License	2452-97A	Ralph and Linda Callear	Storage Building, Garage, Sidewalk/Landscaping	T13N, R10W, Sec 18	NA	9500
Muskegon River (*)	Hardy	License	2452-98	Terry Kuiken	Landscaping, Gardening, Mowing and temporary storage of personal items	T13N, R10W, Sec 18	$140.00	9505
Muskegon River (*)	Hardy	License	2452-98A	Terry Kuiken	A portion of a Home, Well, Sidewalk	T13N, R10W, Sec 18	NA	9510
Muskegon River (*)	Rogers	License	2451-05	Township of Mecosta	Fishing Pier, Parking, Vault Toilet, Picnicking, Landscaping/Gov't Non-Profit Rec.	T14N, R10W, Sec 11	NA	9563
Muskegon River (*)	Rogers	License	2451-06	Stephanie Timmerman	Landscaping and continued use of existing storage building	T14N, R10W, Sec 1	$140.00	9562
Muskegon River	Rogers	License	2451-13	Rich Hoekwater	Ingress/Egress	T14N, R10W, Sec 14	$55.00	9564

EXHIBIT E-1

Form of Quitclaim Deed

QUITCLAIM DEED

CONSUMERS ENERGY COMPANY (formerly Consumers Power Company), a Michigan corporation, One Energy Plaza, Jackson, Michigan 49201, Grantor,

for the sum of $_____, receipt of which Grantee hereby acknowledges,

quitclaims to

_____, Grantee,

the following described land located in the Township of _____, _____ County, State of Michigan:

See Exhibit A attached hereto.[1]

(IF DECLARATION OF RESTRICTIVE COVENANT WAS RECORDED) subject to the terms conditions, regulations, restrictions, easements, covenants, and other matters of record including a Declaration of Restrictive Covenant recorded on _____ in Liber _____, Page _____, _____County Records, reserving to Grantor, its successors and assigns, forever, the following easements and rights:[2]

a) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a line or lines of electric facilities, said line or lines may vary in voltage from 0-46kV, together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor for the purpose of transmitting and distributing electricity in, on, over, under, across, and through a 40-foot wide strip of land, with an additional 10-feet of either side of the 40-foot wide strip for temporary workspace described as follows:

   (centerline description)

   together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy, and otherwise remove or control any trees, brush, roots, and other vegetation within this 40-foot wide easement, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy, and otherwise remove or control any trees, brush, roots, and other vegetation located outside of this 40- foot wide easement which are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this 40-foot wide easement. By accepting this deed, Grantee agrees, for

[1] NTD: Tax ID Number to be included with the legal description set forth on Exhibit A.

[2] NTD: Quitclaim Deed to be finalized for each Project based on necessary Reserved Easements.

Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said 40-foot wide easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said 40-foot wide easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said 40-foot wide easement.

b) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a line or lines of electric facilities, said line or lines may vary in voltage from 47-138kV, together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor for the purpose of transmitting and distributing electricity in, on, over, under, across, and through an 80-foot wide strip of land, with an additional 10-feet of either side of the 80-foot wide strip for temporary workspace described as follows:

(centerline description)

together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy and otherwise remove or control any trees, brush, roots, and other vegetation within this 80-foot wide easement, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, destroy and otherwise remove or control any trees, brush, roots, and other vegetation located outside of this 80-foot wide easement which are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this 80-foot wide easement. By accepting this deed, Grantee agrees, for Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said 80-foot wide easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said 80-foot wide easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said 80-foot wide easement.

c) an easement for the purposes of constructing, operating, maintaining, inspecting (including aerial patrol), surveying, replacing, reconstructing, improving, removing, relocating, changing the size of, enlarging, and protecting a substation with all applicable appurtenances including but not limited to switching stations, transformers, line or lines of electric facilities together with any pole structures, poles, or any combination of same, wires, cables, conduits, crossarms, braces, guys, anchors, transformers, electric control circuits and devices, location markers and signs, communication systems, utility lines, protective apparatus and all other equipment, appurtenances, associated fixtures, and facilities, for existing or future needs, whether above or below grade, useful or incidental to or for the operation or protection thereof, and to conduct such other activities as may be convenient in connection therewith as determined by Grantor, said easement to include the fenced area as well as a 20-foot area outside of the fence allowing for temporary works space, appurtenances including but not limited to grounding pads, switch poles, etc. and screening which may include vegetation, and driveway (ingress/Egress) 20 feet in width.

   a. Also reserving an easement for mobile substation and or battery site, to be placed adjacent to the substation utilizing an area of not more than 100 feet by 100 feet.

(fenced area description)

together with the right to i) at any time and from time to time enter the land herein conveyed to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation within 80 feet of the fenced area, and ii) at any time and from time to time enter the land herein conveyed to trim, cut down, and otherwise remove or control any trees, brush, roots, and other vegetation located within 80 feet of the fenced area are of such a height or are of such a species whose mature height that in falling directly to the ground could come into contact with the Grantor's, its successors' and assigns, electric facilities located within this easement. By accepting this deed, Grantee agrees, for Grantee and Grantee's heirs, successors, and assigns, that Grantee, and Grantee's heirs, successors, and assigns, shall i) not build, create, construct, or permit to be built, created, or constructed, any obstruction, building, septic system, drain field, fuel tank, pond, swimming pool, lake, pit, well, foundation, engineering works, installation or any other type of structure over, under, or on within said easement, whether temporary or permanent, natural or man-made; ii) not materially alter the ground elevation within said easement; and iii) allow Grantor access over the entirety of the land herein conveyed to access said easement.

d) Excepting and reserving to the Grantor, its successor and assigns forever: a) all right, title, and interest in and to all coal, oil, gas, gas and other minerals not including sand, clay, or gravel in or under the surface of the land herein conveyed, and b) the exclusive right to store, restore, and/or protect oil, natural gas, carbon dioxide and other minerals in the subsurface strata underlying said land, but without entering upon the surface of the land herein conveyed.

Notwithstanding any other provision contained herein, in connection with the easements and rights reserved by Grantor herein, Grantee, its successors, and assigns, have the right to perform any and all acts required by the conditions of the license for Project No. _____, Federal Energy Regulatory Commission ("Commission") orders, Commission delegated staff orders or directives, or the Commission's regulations in effect from time to time, at any time, without the prior approval of Grantor.

Grantor may, at Grantor's sole cost and expense, deliver to Grantee one or more requested changes to the terms, legal descriptions and/or location details of the easement rights as reflected herein. Upon such request, the parties shall work in good faith to reach mutual agreement on any such changes, such agreement not to be unreasonably withheld, conditioned or delayed by either party. The parties shall execute a mutually agreed upon instrument in recordable form as may be reasonably necessary to memorialize any such mutually agreed upon changes. If reasonably required by Grantee, Grantee shall in accordance with applicable law and as Grantee may otherwise reasonably deem necessary, give notice to or seek approval (in form and substance reasonably acceptable to Grantee) from the Commission for any such changes as a condition to executing any such instrument, in which case, the parties shall cooperate and work in good faith to give such notices or seek such approvals as soon as reasonably practicable. Upon the execution of any such instrument, Grantor shall cause the instrument to be recorded at Grantor's sole cost and expense.

a) This conveyance is made expressly subject to rights and interests granted by Grantor to Michigan Electric Transmission Company ("METC") in respect to the above-described land as set forth in and on the terms and conditions of a certain Amended and Restated Easement Agreement between Grantor and METC dated April 29, 2002 (the "Easement Agreement"); which Easement Agreement is recorded in various counties, including _____ County where it is recorded in Liber _____ at Page _____.

Grantor does not hereby convey or assign to Grantee any rights to receive any part of the Base Rent payable by METC, its successors or assigns, under the Easement Agreement; and (as provided in Section 10.2 of the Easement Agreement) Grantor reserves all rights to receive said Base Rent in respect to the herein conveyed land.

Grantor also does not convey or assign to Grantee, and Grantor reserves, all rights and interests under Article 5 of the Easement Agreement in respect to the herein conveyed land; such reserved rights and interests expressly including (without limiting any other rights or interests under said Article 5 of the Easement Agreement) all rights under said Article 5: (i) to receive notice of any "Additions/Alterations" (as defined in said Article 5 of the Easement Agreement) to be undertaken by METC on the herein conveyed land, and (ii) to specify and to enforce work and design restrictions and precautions that METC is to follow in connection with an Addition/Alteration.

Grantor also does not convey or assign to Grantee, and Grantor reserves, all rights under, and subject to the terms and conditions of, the Easement Agreement to use and occupy and to authorize any third parties to use and occupy METC's Transmission Facilities with facilities constituting "Compatible Uses" as defined in the Easement Agreement, and to receive all revenues for any such third party uses or occupations of METC's Transmission Facilities.

b) Also reserving to Grantor the easement and right to enter at all times upon the land herein conveyed and to: (a) construct, operate, maintain, repair, inspect (including aerial patrol,) survey, improve, change the size of, enlarge, remove, relocate, reconstruct, and replace any number of existing or future electric and/or communications lines and facilities, which may consist of towers, pole structures, poles, wires, cables, conduits, crossarms, transformers, braces, guys, anchors, antennas and/or other fixtures and appurtenances, on, over, under and across any part of the land herein conveyed, including all public highways upon or adjacent to said land; and (b) cut, trim, remove, destroy or otherwise control any or all trees and brush which may, in the opinion of Grantor, interfere or threaten to interfere with or be hazardous to the construction, operation or maintenance of any of said lines and facilities. Grantee covenants and agrees, as a covenant that will run with the land, that no buildings or other structures will at any time be placed under or over any of said lines or facilities or within such proximity thereto as to interfere with, or in the opinion of Grantor threaten to interfere with, the construction, operation or maintenance of any of said lines or facilities. It is understood that the lines and facilities referred to above in this paragraph may, in whole in or part, be physically located on Transmission Facilities of METC pursuant to applicable provisions of the Easement Agreement, and/or may, in whole or in part, be located on the herein conveyed land separate from and independent of any Transmission Facilities of METC.

Except for the rights and interests under the Easement Agreement that are reserved to Grantor herein, Grantor's rights and interests under the Easement Agreement are, with respect (and only with respect) to the herein conveyed land, hereby conveyed to Grantee. Except specifically in connection with the use or exercise of rights under the Easement Agreement reserved by Grantor herein, Grantor's covenants, agreements and obligations under the Easement Agreement shall, with respect (and only with respect) to the herein conveyed land pass to Grantee and, as expressly provided in Section 10.2 of the Easement Agreement, Grantor shall not hereafter be liable therefore.

It is further understood that as used in any of the foregoing provisions hereof, references to "Grantor," "Grantee" and "METC" shall include their respective successors and assigns.

STATEMENT UNDER MCL 560.109(3): Grantor grants to Grantee the right to make all allowable divisions of the land conveyed, under Section 108 of the Parcels Division Act, 1967 PA 288, as amended.

NOTICE UNDER MCL 560.109(4): The land conveyed may be located within the vicinity of farmland or a farm operation. Generally accepted agricultural and management practices which may generate noise, dust, odors, and other associated conditions may be used and are protected by the Michigan Right to Farm Act.

Dated this _____ day of _____, 202____

CONSUMERS ENERGY COMPANY

By:_____

Its_____

Acknowledged before me in _____ County, Michigan, on _____, 20____, by _____ , _____ , of Consumers Energy Company, a Michigan corporation, for the corporation.

_____
Notary Public
_____ County, Michigan

My commission expires: _____

Prepared by:
Robert Marvin
Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201

When recorded, return to:
Julie Guinn (EP7-432)
Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201

Send subsequent tax bills to:
Grantee

REDACTED

EXHIBIT A

EXHIBIT E-2

Form of Covenant Deed for Residential Fee Simple Real Property

COVENANT DEED

CONSUMERS ENERGY COMPANY ("Grantor"), whose address is _____, conveys and grants to **CONFLUENCE HYDRO, LLC ("Grantee")**, whose address is _____, the following described land situated in the [City/Township/Village] of _____, County of _____, and State of Michigan, more fully described as follows:

[insert legal description]

Commonly known as: _____
Tax Parcel ID No: _____

together with all rights and easements appurtenant and belonging thereto and all and singular tenements, hereditaments, and appurtenances thereunto belonging or in any way appertaining, for the full consideration of One ($1.00) Dollar, subject to existing easements, interests, encumbrances, and restrictions of record, if any, the lien of taxes not yet due and payable, and all appliable building and zoning ordinances. Grantor covenants and agrees that Grantor has not previously done or committed or willingly suffered to be done or committed any act, matter, or thing that would cause the premises or any part of them to be charged or encumbered in title, estate, or otherwise.

STATEMENT UNDER MCL 560.109(3): The Grantor also grants to the Grantee the right to make all divisions of the land conveyed under Section 108 of the Land Division Act, Act No. 288 of Public Acts of 1967, as amended. Notwithstanding the foregoing, Grantor makes no representations or warranties regarding whether any divisions are available or the number of divisions that may be available or whether any such divisions are permissible under local zoning ordinances.

NOTICE UNDER MCL 560.109(4): The land conveyed may be located within the vicinity of farmland or a farm operation. Generally accepted agricultural and management practices which may generate noise, dust, odors and other associated conditions may be used and are protected by the Michigan Right to Farm Act.

This transfer is exempt from county transfer tax pursuant to MCL 207.505(a) and exempt from state transfer tax pursuant to MCL 207.526(a).

Dated this ___ day of _____, 20__.

GRANTOR:

CONSUMERS ENERGY COMPANY

By: _____
Name: _____
Its: _____

REDACTED

STATE OF MICHIGAN)
)
COUNTY OF _____)

Acknowledged before me in _____ County, Michigan, on _____, 20____, by _____ , _____ , of Consumers Energy Company, a Michigan corporation, for the corporation.

_____
_____, Notary Public,
State of Michigan, County of _____
My Commission Expires: _____
Acting in the County of _____

When Recorded Return To: Grantee	Send Subsequent Tax Bills To: Grantee	Drafted By: Robert Marvin Consumers Energy Plaza One Energy Plaza, Jackson, Michigan 49201

EXHIBIT F

Form of Bill of Sale and General Assignment

[Attached.]

Form of Bill of Sale and General Assignment

This **BILL OF SALE AND GENERAL ASSIGNMENT** (the "Bill of Sale") is executed on [_____ __, 202_] (the "Effective Date") by and between **CONSUMERS ENERGY COMPANY**, a Michigan corporation ("Assignor"), and **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("Assignee"). Assignor and Assignee are sometimes referred to herein individually as a "Party" and collectively as the "Parties". Capitalized terms used but not defined in this Bill of Sale shall have the meanings given to such terms in the Purchase and Sale Agreement (defined below).

RECITALS

WHEREAS, Assignor and Assignee have entered into that certain Purchase and Sale Agreement, dated as of September 3, 2025 (the "Purchase and Sale Agreement"), pursuant to which, among other things, Assignor has agreed to sell, transfer, convey, assign and deliver all of its rights, title, interest and Liabilities (other than Excluded Liabilities), and Assignee has agreed to accept and assume all of the rights, title, interest and Liabilities (other than Excluded Liabilities) arising, in and to all of the Project Assets and Assumed Liabilities;

WHEREAS, Assignor desires to sell, transfer, convey, assign and deliver all of its rights, title, interest and Liabilities (other than Excluded Liabilities) in and to the Project Assets (other than the Real Property Agreements and the Fee Simple Real Property) and Assumed Liabilities to Assignee;

WHEREAS, Assignee desires to accept and assume all of the rights, title, interest and Liabilities (other than Excluded Liabilities) arising in and to the Project Assets (other than the Real Property Agreements and the Fee Simple Real Property) and Assumed Liabilities; and

WHEREAS, the execution and delivery of this Bill of Sale by Assignor and Assignee is a condition to the obligations of the Parties to complete the transactions contemplated by the Purchase and Sale Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual representations, warranties, covenants, and agreements set forth in this Bill of Sale and in the Purchase and Sale Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. **Sale, Transfer and Assignment of Purchased Assets**. Effective as of the Effective Date, Assignor hereby sells, transfers, conveys, assigns and delivers to Assignee, and Assignee hereby accepts from Assignor, all of Seller's rights, title and interests in, to and under the Project Assets (other than the Real Property Agreements and Fee Simple Real Property), but specifically excluding the Excluded Assets, free and clear of all Liens other than Permitted Exceptions. Delivery of this Bill of Sale constitutes receipt by Assignee of such Project Assets (other than the Real Property Agreements and Fee Simple Real Property), to have and to hold all such Project Assets (other than the Real Property Agreements and Fee Simple Real Property) for Assignee and its successors and assigns for their own use and behalf forever.

2. **Assumption**. Assignee hereby accepts the foregoing assignment and assumes, and agrees to pay, perform according to their terms, satisfy and discharge when due or when required to be performed or

discharged all Assumed Liabilities (other than Assumed Liabilities relating to, arising from or associated with the Real Property Agreements and the Fee Simple Real Property), but specifically excluding the Excluded Liabilities, regardless of whether such Assumed Liabilities arose or were incurred prior to, on or after the Effective Date.

3. **Interpretation**. Nothing in this Bill of Sale, whether express or implied, is intended to or shall be construed to modify, expand or limit in any way the terms of the Purchase and Sale Agreement. To the extent that any provision of this Bill of Sale conflicts or is inconsistent with the terms of the Purchase and Sale Agreement, the Purchase and Sale Agreement will govern.

4. **Binding on Successors and Assigns**. Subject to Section 13.3 (Assignment) of the Purchase and Sale Agreement, this Bill of Sale shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assigns.

5. **Governing Law; Jurisdiction**. The governing law and jurisdiction provisions set forth in Section 13.5 (Governing Law; Jurisdiction) of the Purchase and Sale Agreement shall apply to this Bill of Sale, *mutatis mutandis*.

6. **Headings**. The headings used in this Bill of Sale are for purposes of convenience only and shall not be used in construing the provisions hereof.

7. **Counterparts**. This Bill of Sale may be executed in any number of counterparts, and it shall be sufficient that the signature of each Party appears on one or more such counterparts. All counterparts shall collectively constitute a single agreement.

[*SIGNATURES ON FOLLOWING PAGE*]

IN WITNESS WHEREOF, this BILL OF SALE AND GENERAL ASSIGNMENT is executed as of the Effective Date.

ASSIGNOR:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name: _____
Title: _____

ASSIGNEE:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By: _____
Name: _____
Title: _____

REDACTED

EXHIBIT G

Leases

River - Facility	Agreement Number	Lessee	Use/Purpose	Location	Annual Fee
AuSable River – Alcona	2447-01	Curtis Township Parks Commission	Campground, Swimming, Picnicking, Boating Access, Docks	T25N, R5E, Sec 3, 4, 10, 11	$2,700
AuSable River – Foote	2436-06	Charter Township of Oscoda	Camping, Boating Access/Public Park	T24N, R8E, Sec 20, 28, 29, 33, 34	$2,700
AuSable River – Foote	2436-18	The Department of Natural Resources of The State of Michigan	Boating Access, Snowmobile Trail	T24N, R8E Sec 34, 35 T23N, R8E Sec 2	$2,700
AuSable River – Mio	2448-09	The Department of Natural Resources of The State of Michigan	Campground, Swimming, Picnicking, Boating Access	T26N, R2E, Sec 3, 2	$2,700
Ausable River - Mio	2448-10	Oscoda County Parks and Recreation Commission	Campground, Swimming, Picnicking, Boat Docks, Underground Storage Tanks	T26N, R2E Sec 11, 12	$1,875
Grand River – Weber	2566-02	State of Michigan/DNR	Boat Launch	T7N, R5W, Sec 33	N/A
Manistee River – Hodenpyl	2599-05	Northern Exposure Campground, Inc.	Campground, Swimming, Picnicking, Boating Access, Marina, Underground Tanks, Docks/Public Recreation.	T23N, R12W, Sec 10, 16, 17, 20, 21	$2,700
Manistee River – Tippy	2580-04	The Department of Natural Resources of the State of Michigan	Campground, Picnicking, Boating Access	T22N, R13W, Sec 31 T22N, R14W, Sec 36	$2,700
Muskegon River – Hardy	2452-106	Spectrum Mid-America, LLC	Construction, Operation, Maintenance and Repair of Fiber Optic Cable Line	T13N, R11W, Sec 28	N/A
Muskegon River – Hardy	2452-17	Newaygo County	Campground, Swimming, Picnicking, Boating Access, Marina, Boat Docks and Underground Storage Tanks/Public Recreational Park	T13N, R11W, Sec 28, 21 T12N, R11W, Sec 18	$2,700

Muskegon River – Hardy	2452-22	County of Mecosta	Campground, Swimming, Picnicking, Boating Access, Marina, Underground tanks and Dock Plan/Public Park	T14N, R10W Sec 20, 31, 32	$2,700
Muskegon River – Hardy	2452-28	Big Prairie Township	Campground, Swimming, Picnicking, Boating Access, Marina, Underground Tanks/Public Park	T13N, R11W, Sec 12, 13, 14, 22, 23, 24, 28	$2,700

EXHIBIT H

Form of Assignment and Assumption of Real Property Agreements

[Attached.]

Form of Assignment and Assumption of Real Property Agreements

This **ASSIGNMENT AND ASSUMPTION OF REAL PROPERTY AGREEMENTS** (the "Assignment") is executed on [_____, 202_] (the "Effective Date") by and between **CONSUMERS ENERGY COMPANY**, a Michigan corporation ("Assignor"), and **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("Assignee"). Assignor and Assignee are sometimes referred to herein individually as a "Party" and collectively as the "Parties". Capitalized terms used but not defined in this Assignment shall have the meanings given to such terms in the Purchase and Sale Agreement (defined below).

RECITALS

WHEREAS, Assignor and Assignee have entered into that certain Purchase and Sale Agreement, dated as of September 3, 2025 (the "Purchase and Sale Agreement"), pursuant to which, among other things, Assignor has agreed to sell, transfer, convey, assign and deliver all of its rights, title, interest and Liabilities (other than Excluded Liabilities), and Assignee has agreed to accept and assume all of the rights, title, interest and Liabilities (other than Excluded Liabilities) arising, in and to all of the Real Property Agreements and Assumed Liabilities (in connection therewith), which include, without limitation, those agreements set forth in Exhibit A attached hereto and by reference made a part hereof;

WHEREAS, Assignor desires to sell, transfer, convey, assign and deliver all of its rights, title, interest and Liabilities (other than Excluded Liabilities) in and to the Real Property Agreements and Assumed Liabilities (in connection therewith) to Assignee;

WHEREAS, Assignee desires to accept and assume all of the rights, title, interest and Liabilities (other than Excluded Liabilities) arising in and to the Real Property Agreements and Assumed Liabilities (in connection therewith); and

WHEREAS, the execution and delivery of this Assignment by Assignor and Assignee is a condition to the obligations of the Parties to complete the transactions contemplated by the Purchase and Sale Agreement.

NOW, THEREFORE, in consideration of the premises and the mutual representations, warranties, covenants, and agreements set forth in this Assignment and in the Purchase and Sale Agreement, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

AGREEMENT

1. **Assignment.** Effective as of the Effective Date, Assignor hereby sells, transfers, conveys, assigns and delivers to Assignee, and Assignee hereby accepts from Assignor, all of Seller's rights, title and interests in, to and under the Real Property Agreements, but specifically excluding the Excluded Assets, free and clear of all Liens other than Permitted Exceptions. Delivery of this Assignment constitutes receipt by Assignee of such Real Property Agreements, to have and to hold all such Real Property Agreements for Assignee and its successors and assigns for their own use and behalf forever.

2. **Assumption.** Assignee hereby accepts the foregoing assignment and assumes, and agrees to pay, perform according to their terms, satisfy and discharge when due or when required to be performed or discharged all Assumed Liabilities (in connection with the Real Property Agreements), but specifically

excluding the Excluded Liabilities, regardless of whether such Assumed Liabilities arose or were incurred prior to, on or after the Effective Date.

3. **Interpretation**. Nothing in this Assignment, whether express or implied, is intended to or shall be construed to modify, expand or limit in any way the terms of the Purchase and Sale Agreement. To the extent that any provision of this Assignment conflicts or is inconsistent with the terms of the Purchase and Sale Agreement, the Purchase and Sale Agreement will govern.

4. **Binding on Successors and Assigns**. Subject to Section 13.3 (Assignment) of the Purchase and Sale Agreement, this Assignment shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assigns.

5. **Governing Law; Jurisdiction**. The governing law and jurisdiction provisions set forth in Section 13.5 (Governing Law; Jurisdiction) of the Purchase and Sale Agreement shall apply to this Assignment, *mutatis mutandis*.

6. **Headings**. The headings used in this Assignment are for purposes of convenience only and shall not be used in construing the provisions hereof.

7. **Counterparts**. This Assignment may be executed in any number of counterparts, and it shall be sufficient that the signature of each Party appears on one or more such counterparts. All counterparts shall collectively constitute a single agreement.

[*SIGNATURES ON FOLLOWING PAGE*]

IN WITNESS WHEREOF, this ASSIGNMENT AND ASSUMPTION OF REAL PROPERTY AGREEMENTS is executed as of the Effective Date.

ASSIGNOR:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name:
Title:

ASSIGNEE:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By: _____
Name:
Title:

EXHIBIT A TO ASSIGNMENT AND ASSUMPTION OF REAL PROPERTY AGREEMENTS

Real Property Agreements

[INSERT LIST OF ALL KNOWN REAL PROPERTY AGREEMENTS]

The Real Property Agreements shall include the agreements listed above, as well as all other Contracts that grant, convey or assign to Assignor or any of its Affiliates a fee, leasehold, easement or other ownership, use or occupancy interest, or an option to acquire any of the foregoing interests, in the Land for the ownership, use, operation or maintenance of the Projects, to which Assignor or any of its Affiliates is a party, together with all amendments, assignments and modifications as to any of such Contracts.

EXHIBIT I

[RESERVED]

EXHIBIT J-1

Form of Secretary's Certificate – Seller

[Attached.]

SECRETARY'S CERTIFICATE OF CONSUMERS ENERGY COMPANY

[•], 202[_]

This Secretary's Certificate is being executed and delivered pursuant to that certain Purchase and Sale Agreement, dated as of September 3, 2025 (as may be amended, restated, supplemented or otherwise modified from time to time, the "Purchase and Sale Agreement"), by and between Consumers Energy Company, a Michigan corporation (the "Company") and Confluence Hydro, LLC, a Delaware limited liability company (the "Purchaser"). Capitalized terms used but not defined herein shall have the meaning ascribed to them in the Purchase and Sale Agreement.

Pursuant to Section 8.2(g) of the Purchase and Sale Agreement, the undersigned hereby certifies to Purchaser, solely in his or her capacity as Secretary or Assistant Secretary of the Company (and not in his or her personal or individual capacity) that:

1. Attached hereto as Exhibit A is a true, accurate and complete copy of a certificate of good standing with respect to the Company, issued by the Secretary of State of the State of Michigan as of [•], 202[_].

2. Attached hereto as Exhibit B is a true, accurate and complete copy of the certificate of incorporation of the Company, as in effect on the date hereof, certified by the Secretary of State of the State of Michigan as of [•], 202[_].

3. Attached hereto as Exhibit C is a true, accurate and complete copy of the resolutions of the Company authorizing the execution, delivery and performance by the Company of the Purchase and Sale Agreement and the Ancillary Agreements to be executed and delivered by the Company in connection with the Purchase and Sale Agreement, and such resolutions are in full force and effect as of the date hereof.

4. Attached hereto as Exhibit D is an incumbency certificate of the officers of the Company, each holding the office(s) set forth opposite his or her name, and the signature appearing opposite such officer's name is his or her genuine signature. As of the date hereof, each such officer is duly authorized to execute the Purchase and Sale Agreement, the Ancillary Agreements, and the other documents, instruments, agreements or certificates to be delivered pursuant thereto.

[*Signature page to follow.*]

IN WITNESS WHEREOF, the undersigned has executed and delivered this Secretary's Certificate, as of the date first set forth above.

_____

Name: [•]
Title: [•]

EXHIBIT A

Certificate of Good Standing

[See attached.]

EXHIBIT B

Articles of Incorporation

[See attached.]

EXHIBIT C

Resolutions

[See attached.]

REDACTED

EXHIBIT D

Certificate of Incumbency and Authority

NAME	TITLE(S)	SPECIMEN SIGNATURE
[To Be Added]	[To Be Added]	_____
[To Be Added]	[To Be Added]	_____
[To Be Added]	[To Be Added]	_____
[To Be Added]	[To Be Added]	_____

EXHIBIT J-2

Form of Closing Certificate – Seller

[Attached.]

CONSUMERS ENERGY COMPANY

CLOSING CERTIFICATE

[•], 202[_]

This Closing Certificate (this "Certificate") is provided pursuant to Section 8.2(c) of that certain Purchase and Sale Agreement, dated as of September 3, 2025 (as may be further amended, restated, supplemented or otherwise modified from time to time, the "Purchase and Sale Agreement"), by and between Consumers Energy Company, a Michigan corporation ("Seller"), and Confluence Hydro, LLC, a Delaware limited liability company ("Purchaser"). All capitalized terms used but not defined herein shall have the meanings ascribed to them in the Purchase and Sale Agreement.

The undersigned, acting solely on behalf of Seller in his or her capacity as a duly authorized officer of Seller and not in his or her individual capacity, hereby certifies on behalf of Seller that, as of the date hereof:

1. Seller has performed and complied with, in all material respects, the obligations required by the Purchase and Sale Agreement to be so performed or complied with by Seller prior to or as of the date hereof.

2. The representations and warranties of Seller contained in Article 5 of the Purchase and Sale Agreement were true and accurate on the Effective Date and are true and correct as of the date hereof as though made on and as of the date hereof (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date), except where the failure of such representations and warranties to be so true and correct (without giving effect to any limitation as to "materiality", "Material Adverse Effect" or other similar qualifiers set forth in any individual representation or warranty) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

3. Since the Effective Date, there has been no Material Adverse Effect, nor any event or events occurring, and no circumstances existing that, individually or in the aggregate, with or without the lapse of time, would reasonably be expected to result in a Material Adverse Effect.

[*Signature page follows.*]

IN WITNESS WHEREOF, the undersigned has duly executed this Certificate as of the date first written above.

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name: _____
Title: _____

EXHIBIT K

Form of Owner's Affidavit

OWNER'S AFFIDAVIT

STATE OF_____)
) ss:
COUNTY OF _____)

_____(name of affiant) (the "Affiant")_____, the ____(corporate title of affiant)_____ of ___(name of vested owner)_____ a _____(state of formation)_____ (type of entity) ("Owner") the owner of the real property described on Exhibit A attached hereto (the "Premises") described in Title Commitment No. ___(file number)_____ (the "Title Commitment"), and in consideration of Stewart Title Guaranty Company (the "Company") issuing its policy or policies of title insurance insuring an interest in the Premises, and being duly sworn, deposes and states as follows:

1. That to the best of Affiant's knowledge, the Owner is the owner of the Premises described in said Title Commitment.

2. That to the best of Affiant's knowledge and except as set forth in the Title Commitment, Owner's fee simple title to the Premises has been peaceable and undisturbed during the time Owner has held fee simple title to the Premises, and that to the best of Affiant's knowledge, title to the Premises has not been disputed or questioned during the time Owner has held fee simple title to the Premises.

3. That to the best of Affiant's knowledge, no proceedings in bankruptcy or receivership have been instituted by or against the Owner within the last ten (10) years, and that to the best of Affiant's knowledge, the Owner has never made an assignment for the benefit of creditors.

4. That to the best of Affiant's knowledge, there is not any action or proceeding now pending in any state or federal court in the United States, to which the Owner is a party and which affects the Premises; nor is there any state or federal court judgment, state or federal tax lien, or any other state or federal lien of any kind or nature against the Owner, which could constitute a lien or charge upon the Premises.

5. That to the best of Affiant's knowledge, during the preceding ninety (90) days there has not been any construction or major repair work performed on the Premises, or, that in the event work has been any construction or major repair work performed on the Premises during such ninety (90) day period, that all such construction and major repair work have been completed and are acceptable to the Owner, the Owner has paid in full all contractors, laborers, and materialmen for such construction or major repair work during such ninety

(90) day period, except as shown on an exhibit attached hereto.

6. That, to the best of Affiant's knowledge, there are not any delinquent real estate taxes or unpaid current real estate taxes affecting the Premises, nor any pending or levied assessments affecting the Premises. That, to the best of Affiant's knowledge, there are no delinquent amounts owed for water, sewer, refuse, or other municipal charges that could constitute a lien on the Premises.

7. That to the best of Affiant's knowledge and except as set forth in the Title Commitment, Owner is not a party to any unrecorded mortgages, conditional bills of sale, retention of title agreements, security agreements, agreements not to sell or encumber, financing statements, or personal property leases, which affect the Premises or which affect any fixtures, appliances, or equipment now installed in or on the Premises

8. (a) That to the best of Affiant's knowledge, all tenants or parties who have leasehold or tenancy rights to occupy any portion of the Premises are those listed on the rent roll annexed hereto as Exhibit "A". (b) That to the best of Affiant's knowledge, no party has any option, right of first offer, or right of first refusal to purchase all or part of the Premises, except: the Amended and Restated Easement Agreement, dated as of April 29, 2002, Between Owner and Michigan Electric Transmission Company, a Michigan corporation.

9. Owner has not entered into any agreement with any commercial real estate broker or property manager for the payment of a fee or real estate commission relating to the purchase, sale, property management, leasing, mortgaging or other licensed services pertaining to the Premises other than such fees or commissions that will be paid in full in connection with the instant transaction, as follows:

   Contract for Technical and Consulting Services, dated as of September 20, 2023, between Owner and Clear Energy Brokerage & Consulting, a Michigan Limited Liability Corporation, as amended. _____

10. Owner will not take any action or fail to take any action that would result in a defect, lien, encumbrance, adverse claim, or other matter (each a "Title Defect") being filed or recorded against the Premises between the effective date of the Title Commitment and the date of recording of the insured documents (the "Gap Period"). In consideration of the Company issuing its policy or policies of title insurance, without an exception on Schedule B thereof for any Title Defect arising or being recorded during the Gap Period, Owner hereby agrees to promptly remove, bond, or otherwise dispose of any Title Defect arising or recorded during the Gap Period.

11. This affidavit is made for the purpose of inducing the Company to issue its policy or policies of title insurance, and Owner acknowledges that, in issuing its policy or policies, the Company is placing material reliance upon the facts stated in this affidavit. Affiant avers the foregoing statements are true and correct to the best of Affiant's knowledge and belief.

Dated this ____ day of _____, 20___.

_____(name of vested owner)_____

By: _____

_____(name of affiant)_____

_____(corporate title of affiant)_____

Subscribed and sworn to before me

this____ day of _____ ,20__

_____

Notary Public

EXHIBIT L-1

Form of Secretary's Certificate – Purchaser

[Attached.]

SECRETARY'S CERTIFICATE OF CONFLUENCE HYDRO, LLC

[•], 202[_]

This Secretary's Certificate is being executed and delivered pursuant to that certain Purchase and Sale Agreement, dated as of September 3, 2025 (as may be amended, restated, supplemented or otherwise modified from time to time, the "Purchase and Sale Agreement"), by and between Consumers Energy Company, a Michigan corporation ("Seller") and Confluence Hydro, LLC, a Delaware limited liability company (the "Company"). Capitalized terms used but not defined herein shall have the meaning ascribed to them in the Purchase and Sale Agreement.

Pursuant to Section 8.3(e) of the Purchase and Sale Agreement, the undersigned hereby certifies to Seller, solely in his or her capacity as Secretary of the Company (and not in his or her personal or individual capacity) that:

1. Attached hereto as Exhibit A is a true, accurate and complete copy of a certificate of good standing with respect to the Company, issued by the Secretary of State of the State of Delaware as of [•], 202[_].

2. Attached hereto as Exhibit B is a true, accurate and complete copy of the certificate of formation of the Company, as in effect on the date hereof, certified by the Secretary of State of the State of Delaware as of [•], 202[_].

3. Attached hereto as Exhibit C is a true, accurate and complete copy of the resolutions of the sole member of the Company authorizing the execution, delivery and performance by the Company of the Purchase and Sale Agreement and the Ancillary Agreements to be executed and delivered by the Company in connection with the Purchase and Sale Agreement, and such resolutions are in full force and effect as of the date hereof.

4. Attached hereto as Exhibit D is an incumbency certificate of the officers of the Company, each holding the office(s) set forth opposite his or her name, and the signature appearing opposite such officer's name is his or her genuine signature. As of the date hereof, each such officer is duly authorized to execute the Purchase and Sale Agreement, the Ancillary Agreements, and the other documents, instruments, agreements or certificates to be delivered pursuant thereto.

[*Signature page to follow.*]

IN WITNESS WHEREOF, the undersigned has executed and delivered this Secretary's Certificate, as of the date first set forth above.

_____
Name: [•]
Title: Secretary

EXHIBIT A

Certificate of Good Standing

[See attached.]

EXHIBIT B

Certificate of Incorporation

[See attached.]

REDACTED

EXHIBIT C

Resolutions

[See attached.]

WRITTEN CONSENT OF THE SOLE MEMBER OF
CONFLUENCE HYDRO, LLC
a Delaware limited liability company

[●], 202[●]

Confluence Hydro Holdco, LLC, a Delaware limited liability company (the "Member"), the sole member of Confluence Hydro, LLC a Delaware limited liability company ("Company"), acting pursuant to the Limited Liability Company Agreement of the Company, dated as of June 13, 2025 (the "LLCA"), has the power and authority to conduct the business of the Company and does hereby adopt the following recitals and resolutions pursuant to this written consent in lieu of a meeting of the Member (this "Written Consent"), effective as of the date hereof:

RECITALS:

WHEREAS, capitalized terms not otherwise defined herein shall have the meanings set forth in the LLCA or the Purchase and Sale Agreement (defined below), as applicable.

APPROVAL OF PURCHASE OF THE PROJECT ASSETS

WHEREAS, Company is negotiating a Purchase and Sale Agreement (the "Purchase and Sale Agreement") to be entered into by and between Company and Consumers Energy Company, a Michigan corporation ("Seller");

WHEREAS, Seller is the sole owner of the Project Assets and Liabilities;

WHEREAS, Company desires to purchase, acquire and accept from Seller, and Seller desires to sell and assign to Company, the Project Assets and Assumed Liabilities (the "Assets") all in accordance with, and on the terms and subject to, the conditions set forth in the Purchase and Sale Agreement (the "Acquisition").

NOW, THEREFORE, BE IT RESOLVED, that the Member hereby authorizes the execution, delivery and performance of the Purchase and Sale Agreement and each of the Ancillary Agreements to which Company is a party and the consummation of the Acquisition and the other transactions contemplated by the Purchase and Sale Agreement, and each of which are hereby, approved and adopted in all respects by the Member;

RESOLVED, FURTHER, that the Member deems it advisable and in the best interests of Company, and authorizes Company, to consummate the Acquisition and the other transactions contemplated by the Purchase and Sale Agreement;

RESOLVED, FURTHER, that Company be, and hereby is, authorized, empowered, directed and instructed to enter into, deliver, execute and record any declarations, documents, instruments, certificates and assignments and take all actions as may be necessary, desirable or required to finalize and carry out the purpose and intent of the Purchase and Sale Agreement, including, without limitation, the execution, delivery and performance of the Ancillary Agreements, the obligations of Company under the Purchase and Sale Agreement and the signing of such documents as are required to consummate the Acquisition and the other transactions contemplated by the Purchase and Sale Agreement; and

RESOLVED, FURTHER, that Edward Quinn, Craig Herlihy, and Randall Osteen, each in their capacity as an officer of Company (each an "Authorized Officer" and collectively, the "Authorized Officers"), acting alone without the need for joinder with any other Authorized Officer, are hereby authorized, empowered, directed and instructed to execute and deliver for and on behalf of the Member and Company all declarations, agreements, consents, certificates, assignments, instruments and other documents necessary or related to the execution and performance of the Purchase and Sale Agreement.

GENERAL AUTHORIZATION AND RATIFICATION

RESOLVED, that the Authorized Officers each be, and hereby are, authorized, empowered, directed and instructed to take any and all other actions which may be necessary or appropriate in order to effectuate the foregoing resolutions, to execute and deliver any and all other declarations, agreements, consents, certificates, assignments, instruments and other documents related thereto or in connection therewith as such officers shall deem necessary or appropriate and in the best interests of the Member and Company and to carry out the respective responsibilities and obligations of such persons with respect to the transaction contemplated therein; and

RESOLVED, FURTHER, that each and every action and proceeding of the Authorized Officers taken or performed on behalf of the Company in connection with the foregoing transaction, along with all declarations, agreements, consents, certificates, assignments, instruments and other documents previously executed and delivered hereby, are approved, adopted, ratified, affirmed and confirmed in all respects and are made the acts and deeds of the Member and Company.

[*Signature page follows.*]

IN WITNESS WHEREOF, the Member has executed this Written Consent effective as of the first day written above.

CONFLUENCE HYDRO HOLDCO, LLC
As the sole Member of Confluence Hydro, LLC

By:_____
Name:
Title:

REDACTED

EXHIBIT D

Certificate of Incumbency and Authority

NAME	OFFICE	SPECIMEN SIGNATURE
Edward Quinn	President and Chief Executive Officer	[●]
Craig Herlihy	Chief Financial Officer	[●]
Randall Osteen	General Counsel and Secretary	[●]

EXHIBIT L-2

Form of Closing Certificate – Purchaser

[Attached.]

CONFLUENCE HYDRO, LLC

CLOSING CERTIFICATE

[•], 202[•]

This Closing Certificate (this "Certificate") is provided pursuant to Section 8.3(c) of that certain Purchase and Sale Agreement, dated as of September 3, 2025, (as may be further amended, restated, supplemented or otherwise modified from time to time, the "Purchase and Sale Agreement"), by and between Consumers Energy Company, a Michigan corporation ("Seller"), and Confluence Hydro, LLC, a Delaware limited liability company ("Purchaser"). All capitalized terms used but not defined herein shall have the meanings ascribed to them in the Purchase and Sale Agreement.

The undersigned, acting solely on behalf of Purchaser in his or her capacity as a duly authorized officer of Purchaser and not in his or her individual capacity, hereby certifies on behalf of Purchaser that, as of the date hereof:

1. Purchaser has performed and complied with, in all material respects, the obligations required by the Purchase and Sale Agreement to be so performed or complied with by Purchaser prior to or as of the date hereof.

2. The representations and warranties of Purchaser contained in Article 6 of the Purchase and Sale Agreement were true and accurate on the Effective Date and are true and correct as of the date hereof as though made on and as of the date hereof (except those representations and warranties that address matters only as of a specified date, the accuracy of which shall be determined as of that specified date), except where the failure of such representations and warranties to be so true and correct (without giving effect to any limitation as to "materiality", "Material Adverse Effect" or other similar qualifiers set forth in any individual representation or warranty) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

[*Signature page follows.*]

IN WITNESS WHEREOF, the undersigned has duly executed this Certificate as of the date first written above.

CONFLUENCE HYDRO, LLC

By: _____
Name: [•]
Title: [•]

EXHIBIT M-1

Environmental Indemnity Agreement

[Attached.]

ENVIRONMENTAL INDEMNITY AGREEMENT

THIS ENVIRONMENTAL INDEMNITY AGREEMENT (this "**Agreement**") is made as of [_____], 2025 (the "**Effective Date**") by **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company ("**Indemnitor**"), and each of the entities who have executed this Agreement pursuant to Section 10 of this Agreement (each, a "**Subsidiary**" and, collectively, the "**Subsidiaries**"), in favor of **CONSUMERS ENERGY COMPANY**, a Michigan corporation (together with its successors and assigns, "**Indemnitee**"), and the other Indemnified Parties (as defined below) (each, a "**Party**" and, collectively, the "**Parties**").

RECITALS:

A. Indemnitor and Indemnitee are parties to that certain Purchase and Sale Agreement, dated as of September 3, 2025 (the "**PSA**"), pursuant to which Indemnitee will sell and transfer, and Indemnitor will purchase and acquire, the Project Assets, on the terms and subject to the conditions provided therein.

B. It is a condition precedent to the sale of the Project Assets pursuant to the PSA that Indemnitor execute and deliver this Agreement pursuant to which Indemnitor agrees to provide the indemnifications, covenants, agreements, representations and warranties described in this Agreement for the benefit of Indemnitee and the other Indemnified Parties.

C. Indemnitor is entering into this Agreement to induce Indemnitee to sell and transfer the Project Assets to Indemnitor pursuant to the PSA.

AGREEMENT:

NOW THEREFORE, in consideration of the premises and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Indemnitor hereby represents, warrants, covenants and agrees for the benefit of Indemnitee and the other Indemnified Parties as follows:

1. **Capitalized Terms; Construction**.

(a) Capitalized Terms Defined in PSA. All capitalized terms used herein which are not defined herein shall have the meaning given to them in the PSA.

(b) Capitalized Terms Defined in this Agreement. As used in this Agreement, the following capitalized terms shall have the following meanings:

(i) The term "**Environmental Claim**" means: (A) any Action by a third party, including a Governmental Authority, where Indemnitee or any other Indemnified Party is named as being wholly or partially responsible or liable for an Assumed Environmental Liability; or (B) any written demand, notice, or statement has been made that would lead a reasonable person to conclude that an Action is likely to be asserted, commenced, taken, or otherwise pursued in the future alleging that Indemnitee or any Indemnified Party is wholly or partially responsible or liable for an Assumed Environmental Liability.

(ii) The term "**Indemnified Parties**" means Indemnitee and any of its Affiliates and any of their respective directors, officers, shareholders, members, managers, partners, employees, subsidiaries, agents, successors and assigns.

(iii) The term "**Environmental Losses**" means any and all direct or indirect Losses of

whatever kind or nature, that are related in any way, in whole or in part, to an Assumed Environmental Liability, including:

(A) damages (including loss of use, diminution of value, or natural resource damages), costs, deficiencies, fees, expenses, claims, suits, judgments, awards (including strict liabilities), forfeitures, settlements, equitable relief of any kind, fines, penalties, charges, costs of Remediation incurred to comply with Environmental Law (whether or not performed voluntarily) or other costs to cure;

(B) amounts paid in settlement;

(C) consequential damages to the extent that Indemnitee or any other Indemnified Party is held liable to a third party for such consequential damages;

(D) litigation costs, including reasonable fees of outside counsel and expert witnesses;

(E) costs of engineers or consultants or other advisors; and

(F) investigation costs (including costs for sampling, testing and analysis of soil, sediment, water, air, building materials, and other materials and substances whether solid, liquid or gas).

(iv) The term "**Recoverable Amount**" means an amount equal to the costs that Indemnitee or any other Indemnified Party hereunder has actually incurred for which a remedy is provided under this Agreement, including indemnification pursuant to Section 4.

(v) The term "**Remediation**" means any response, remedial, removal, or corrective action; any activity to clean up, detoxify, decontaminate, contain, abate, or otherwise remediate any Hazardous Materials; any actions to prevent, cure or mitigate any Release or threatened Release of any Hazardous Materials; any action to comply with any Environmental Law or with any Environmental Permits; any inspection, investigation, study, monitoring, assessment, audit, sampling and testing, laboratory or other analysis, evaluation; or remedial design relating to any Release or threatened Release of Hazardous Materials or to anything referred to herein.

(vi) The term "**Security**" means, in the sole discretion of Indemnitor, either:

(A) A cash deposit in an amount equal to Two Million, Five Hundred Thousand Dollars ($2,500,000) into an interest-bearing subaccount held by Indemnitee at a United States commercial bank having assets of at least Ten Billion Dollars ($10,000,000,000) and a credit rating on its long-term senior unsecured debt of at least 'BBB' from Standard & Poor's Rating Group and 'Baa2' from Moody's Investor Services, Inc. upon the deposit of such cash deposit. Such subaccount will be used for the sole purpose of holding cash deposited by or on behalf of Indemnitor as Security pursuant to this Agreement. Indemnitee will remit to Indemnitor any interest earned in the subaccount on a quarterly basis. Indemnitee will release the outstanding balance in the subaccount, if any, to Indemnitor within five (5) Business Days of Indemnitor delivering Security to Indemnitee in the

form and amount provided in (B) below; or

(B) an irrevocable standby letter of credit in an amount equal to Two Million, Five Hundred Thousand Dollars ($2,500,000) and in form and substance reasonably acceptable to Indemnitee, naming Indemnitee as the party entitled to demand payment and present draw requests that:

I. is issued by a United States commercial bank or trust company organized under the laws of the United States of America or a political subdivision thereof, having assets of at least Ten Billion Dollars ($10,000,000,000) (net of reserves) and a credit rating on its long-term senior unsecured debt of at least 'BBB' from Standard & Poor's Rating Group and 'Baa2' from Moody's Investor Services, Inc. upon the issuance of the irrevocable standby letter of credit;

II. by its terms, permits Indemnitee to draw the entire amount available for the purpose of paying Recoverable Amounts;

III. has an initial term of at least one (1) year with automatic renewal each year unless the issuing commercial bank or trust company provides notice to the Indemnitee at least sixty (60) days prior to its expiration date stating its decision not to renew the irrevocable standby letter of credit;

IV. permits Indemnitee to draw the entire amount available if such letter of credit is not renewed or replaced at least thirty (30) days prior to its stated expiration date with substitute Security in accordance with Section 8; and

V. is transferrable by Indemnitee to any person to which Indemnitee may assign this Agreement.

(c) Rules of Construction. Unless the context otherwise requires:

(i) The definitions in this Section 1 shall apply equally to both singular and plural forms and to correlative forms of the terms defined.

(ii) Whenever the context may require, any pronoun shall include the corresponding masculine, feminine and neuter forms.

(iii) The words "include", "includes" and "including" shall be deemed to be followed by the phrase "without limitation".

(iv) The words "hereby", "herewith", "hereto", "herein", "hereof", "hereunder" and words of similar import refer to this Agreement in its entirety and not to any part hereof.

(v) The word "or" has the inclusive meaning represented by the phrase "and/or".

(vi) Unless the context shall otherwise require, all references herein to Sections shall be deemed references to Sections to this Agreement and references to "paragraphs" or "clauses"

shall be to separate paragraphs or clauses of the section or subsection in which the reference occurs.

(vii) Any references to any Contract (including this Agreement), document or Law shall be deemed to be references to such Contract, document or Law as amended, supplemented or modified from time to time in accordance with its terms and the terms hereof, as applicable, and in effect at any given time (and, in the case of any Law, to any successor provisions).

(viii) References to any Person include references to such Person's successors and permitted assigns, and in the case of any Governmental Authority, to any Person(s) succeeding to its functions and capacities.

(ix) Any reference to any federal, state, local, or foreign statute or Law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context shall otherwise require.

(x) All monetary figures shall be in United States Dollars unless otherwise specified.

(xi) The phrase "to the extent" shall mean the degree to which a subject or thing extends, and such phrase shall not simply mean "if".

(xii) All accounting terms used herein and not expressly defined herein shall have the meanings given to them under GAAP.

2. **Environmental Claim Covenants**. Indemnitor covenants and agrees that to the extent Indemnitor receives notice from Indemnitee, or otherwise becomes aware, of an Environmental Claim, Indemnitor shall, at its sole cost and expense:

(a) promptly, but in no event later than seven (7) Business Days after Indemnitor receives notice from Indemnitee, or otherwise becomes aware, of an Environmental Claim (the "**Environmental Claim Notice Date**"), inform Indemnitee in writing of the existence, nature, and circumstances of the Environmental Claim, which notice shall include a copy of any written communication received by Indemnitor providing notice of or otherwise asserting the Environmental Claim;

(b) promptly, but in no event later than the Environmental Claim Notice Date, confirm in writing Indemnitor's commitment and obligation to indemnify, defend and hold harmless Indemnitee and the other Indemnified Parties from and against such Environmental Claim pursuant to the terms of this Agreement;

(c) promptly, but in no event later than ten (10) Business Days after the Environmental Claim Notice Date, inform Indemnitee how Indemnitor will respond to and defend against such Environmental Claim;

(d) on a quarterly basis, and as otherwise reasonably requested by Indemnitee, provide a progress report of such Environmental Claim to Indemnitee and share with Indemnitee any third-party reports and other results (but excluding any privileged attorney-client communications) associated with such Environmental Claim or Indemnitor's response to such Environmental Claim; and

(e) promptly after received or issued by Indemnitor, provide to Indemnitee copies of any written notices or other written communications received or issued by or on behalf of Indemnitor from the Person making such Environmental Claim.

3. **Indemnified Rights/Cooperation and Access**.

(a) Indemnitor shall cooperate with and, promptly upon written request by Indemnitee and at no cost to Indemnitee or any of the other Indemnified Parties, provide or cause to be provided to Indemnitee and any Person(s) designated by Indemnitee, including Environmental consultants, engineers, attorneys, or other professionals engaged by Indemnitee (collectively, "**Environmental Consultant**"), access to the Project Assets, including access to the Projects, the Project Assets and the Calkins Bridge Project Easement Reservation Real Property, as applicable, subject to all third party rights that affect the access, use and operations of the Projects, the Project Assets or the Calkins Bridge Project Easement Reservation Real Property, for purposes of assessing any Environmental Claim that Indemnitee becomes aware of, including after Indemnitee is provided written notice as provided in Section 2(a), *provided, however*, that any assessment of any Environmental Claim performed by Indemnitee or its Environmental Consultant pursuant to this Section 3(a), when the conditions in Section 3(b)(i) or Section 3(b)(ii) are not outstanding, shall be performed at the sole cost and expense of Indemnitee.

(b) If (i) Indemnitor denies its obligation or fails to indemnify, defend and hold harmless Indemnitee and the other Indemnified Parties against Environmental Losses in respect of an Environmental Claim pursuant to this Agreement, or (ii) if Indemnitor otherwise materially breaches or defaults any of its other material obligations under this Agreement in respect of such Environmental Losses or Environmental Claims (such material breaches or defaults of material obligations, collectively, "**Material Indemnification Default**") and Indemnitor fails to cure such Material Indemnification Default within thirty (30) Business Days after written notice thereof, then Indemnitee and any Environmental Consultant shall have the right, but not the obligation, (i) to communicate with the Person making the Environmental Claims, (ii) to enter upon the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, at all reasonable times, subject to all third party rights that affect the access, use and operations of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, and (iii) to assess any and all aspects of such Environmental Claim and Environmental Losses, including the right to conduct any Environmental assessments and/or audit (the scope of which shall be limited to the designated Environmental Claims and Environmental Losses), take samples of soil, sediment, groundwater or other air, water or building materials, and reasonably conduct such other invasive tests as Indemnitee or its Environmental Consultants deem necessary or appropriate; *provided, however*, that Indemnitee and its Environmental Consultants shall use good faith efforts to prudently assess Environmental Claims and Environmental Losses in accordance with all Environmental Laws under this Section 3(b). Once Indemnitee exercises its rights to manage an Environmental Claim or an Environmental Loss as set forth in this Section 3(b), Indemnitor shall no longer manage such Environmental Claim or Environmental Loss, until such time as Indemnitee may, upon notice to Indemnitor, relinquish its rights to manage such Environmental Claim or Environmental Loss; *provided*, *however*, that the obligations of Indemnitor hereunder shall not be negated or otherwise affected by the election of Indemnitee. For the avoidance of doubt, the provisions of this Section 3(b) shall in no way limit Indemnitor's indemnification obligations under Section 4(a). Upon written demand, Indemnitor shall pay or, in the sole and absolute discretion of Indemnitee, reimburse, Indemnitee for the payment of all reasonable fees and disbursements made to Environmental Consultants in connection with the exercise by Indemnitee of its rights set forth in this Section 3(b).

(c) Indemnitee acknowledges that Indemnitor shall have sole control over the means by which Indemnitor complies with the obligation set forth herein, so long as Indemnitor: (i) has timely and affirmatively confirmed the Environmental Claim is subject to indemnification by Indemnitor pursuant to Section 4; (ii) has materially complied with and continues to materially comply with, and is not in material breach or default of, its obligations under this Agreement; (iii) without limiting Indemnitor's right to assert defenses to, or pursue a claim under insurance policies respecting, the Environmental Claim, has timely responded and continues to timely respond to any demand, notice, pleading, and the like in connection with

any proceeding regarding an Environmental Claim; and (iv) conducts and performs such activities in material compliance with the terms of this Agreement; *provided*, *however*, in no event shall Indemnitor waive or purport to waive on behalf of Indemnitee or any other Indemnified Party any defense to any Environmental Claim allegedly resulting from the acts and/or omissions of Indemnitee or any other Indemnified Party or assert that Indemnitee or any other Indemnified Party is a potentially responsible party or liable for such Environmental Claim without Indemnitee's prior written consent. Indemnitor agrees that it shall consult with Indemnitee in advance on any response to an Environmental Claim that reasonably may cause Indemnitee's or any other Indemnified Party's liabilities, obligations and operations and/or defenses to same to be adversely affected.

(d) Indemnitor may condition access by Environmental Consultants, Indemnitee, or any Indemnified Party to the Project Assets pursuant to this Section 3 on (i) avoiding unreasonable interference with Subsidiaries' operations, (ii) delivery of one or more certificates confirming that commercially reasonable insurance coverage in favor of one or more Subsidiaries is in place, and/or (iii) indemnification respecting Losses arising out of such access (other than Losses from the mere discovery of conditions existing as of the time of access).

(e) Nothing in this Agreement shall limit or otherwise affect Indemnitee's access rights to the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property as may be contained in any easement, or other agreement benefitting Indemnitee, including the Reserved Easements or Temporary Substation Easements.

4. **Indemnification.**

(a) Indemnitor covenants and agrees, at its sole cost and expense, to defend, indemnify, reimburse and hold harmless each Indemnified Party from and against any and all Environmental Losses incurred or suffered by any Indemnified Party and against any Environmental Claims arising from, related to or suffered as a result of any Assumed Environmental Liabilities (whether sounding in contract, tort, statute, or whether at Law or in equity, or otherwise), including any and all Environmental Losses imposed upon, incurred or suffered by, or Environmental Claim asserted against, any Indemnified Parties in any way, directly or indirectly, arising out of, related to or suffered as a result of:

(i) any presence, Release or threatened Release of any Hazardous Materials in, on, above, onto, under, or emanating or migrating from the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(ii) any actual or proposed Remediation of any Hazardous Substances at any time located in, on, above, onto, under, or emanating or migrating from the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, whether or not such Remediation is voluntary (*provided* that such voluntary Remediation is undertaken to comply with Environmental Law) or pursuant to court or administrative order, including any removal, remedial or corrective action;

(iii) any past, present, or future non-compliance or violations of any Environmental Law or Environmental Permit in connection with the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, or operations thereon, including any failure by Indemnitor or any of its Affiliates, including the Subsidiaries, and any successor in title to any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, including by any of their respective directors, officers, shareholders, partners, employees, agents, tenants, contractors of any tier, subcontractors, engineers or consultants (individually, an "**Indemnitor Party**" and, collectively, the "**Indemnitor Parties**") to comply with any

Environmental Law or Environmental Permit;

(iv) any act or omission of any Indemnitor Party in accepting any Hazardous Substances for transport to disposal or treatment facilities, incineration vessels or sites selected by an Indemnitor Party;

(v) any act or omission of any Indemnitor Party in arranging for disposal or treatment, or arranging with a transporter for transport, disposal or treatment, of Hazardous Substances relating to the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(vi) any personal injury, wrongful death, property or other damage arising under any statutory or common law or tort law theory by reason of the wrongful acts or omissions of an Indemnitor Party with respect to Environmental matters, including damages assessed for private or public nuisance or for the conducting of an abnormally dangerous activity on or near the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(vii) the imposition, recording or filing or the threatened imposition, recording or filing of any Lien resulting from an Environmental Claim encumbering the Reserved Easements or the Temporary Substation Easement which would interfere with Indemnitee's rights under the Reserved Easement or the Temporary Substation Easement and/or Indemnitee's personal property, fixtures, and equipment; or

(viii) any administrative processes or proceedings or judicial proceedings in any way connected with any matter indemnified in this Section 4(a).

(b) If any Environmental Claim for which Indemnitee or an Indemnified Party might seek indemnification from Indemnitor under Section 4(a) is threatened or asserted against Indemnitee or an Indemnified Party, then Indemnitee will give Indemnitor written notice thereof and thereafter Indemnitor shall defend, indemnify, reimburse and hold harmless Indemnitee and each other Indemnified Party from and against any and all Environmental Claims and associated Environmental Losses in accordance with Section 4(a); *provided* that the failure to so notify Indemnitor shall not relieve Indemnitor of its obligations hereunder.

(c) Notwithstanding anything to the contrary contained in this Agreement or in the PSA, (i) in no event shall the obligations and liabilities of Indemnitor or the Subsidiaries or the rights and benefits of Indemnitee and any of the other Indemnified Parties, in each case, under this Agreement be limited or restricted in any respect by the terms and conditions of the PSA, including the representation and warranties provided therein, and (ii) there shall be no limit, restriction or cap, whether per Environmental Claim or in the aggregate, in respect of Indemnitor's obligations to protect, defend, indemnify, reimburse, release and hold harmless each Indemnified Party from and against any and all Environmental Losses or Environmental Claims under this Agreement.

5. **Duty to Defend and Attorneys and Other Fees and Expenses**. In connection with Indemnitor's indemnification obligations hereunder, Indemnitor shall, at its sole cost and expense, undertake and diligently prosecute to final conclusion or settlement, the defense of any Environmental Claim (if requested by any Indemnified Party, in the name of the Indemnified Party) by attorneys and other professionals approved by such Indemnified Parties, such approval not to be unreasonably withheld, conditioned or delayed. Indemnitor shall utilize good faith efforts to ensure the settlement of any Environmental Claim fully, finally and unconditionally releases Indemnitees and the other Indemnified Parties from all Environmental Losses with respect to such Environmental Claims. Indemnitor shall not

enter into any settlement of an Environmental Claim without the consent of Indemnitee, which consent shall not be unreasonably withheld or delayed. Until such Environmental Claim is ultimately resolved, Indemnitor shall timely respond to any Environmental Claim in any litigation, administrative or other proceeding. Notwithstanding the foregoing, to the extent that Indemnitor defaults on its duty to defend any Indemnified Party, any Indemnified Party may, in their sole and absolute discretion but at Indemnitor's sole cost and expense, engage their own attorneys and other professionals to defend or assist them, and, at the option of such Indemnified Party, their attorneys shall control the resolution of any claim or proceeding, *provided* that no compromise or settlement shall be entered without Indemnitor's consent, which consent shall not be unreasonably withheld, conditioned or delayed. Furthermore, any Indemnified Party may, at their sole cost and expense, engage their own attorneys and other professionals to assist them in monitoring an Environmental Claim.

6. **Unimpaired Liability**. The obligations and liability of Indemnitor and the Subsidiaries under this Agreement shall in no way be limited or impaired in any respect by any subsequent sale, directly or indirectly, of any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation or any or all of the ownership interest in any Person owning any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation who succeeds Indemnitor or any Subsidiary as owner of any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation. In addition, the obligations of Indemnitor and the Subsidiaries under this Agreement shall in no way be limited or impaired by (a) the accuracy or inaccuracy of the representations and warranties made by Indemnitee under the PSA, or (b) Indemnitee's failure to take any action to enforce the terms of the PSA whether with or without notice to Indemnitor or the Subsidiaries and with or without consideration.

7. **Pollution Legal Liability Insurance**. On the Effective Date, Indemnitor shall deliver to Indemnitee, and thereafter maintain during the term of this Agreement, the PLLI. Indemnitor shall not cause or allow the PLLI to lapse or be modified or amended or any claim under the PLLI settled and/or released without Indemnitee's prior written consent. Indemnitor shall cause the renewal or replacement of the PLLI at least thirty (30) days before its expiration or termination.

8. **Security**.

(a) No later than five (5) Business Days after the Effective Date, Indemnitor shall deliver to Indemnitee and thereafter maintain the Security during the term of this Agreement. Indemnitee shall be entitled to draw upon the Security if (a) such amount is a Recoverable Amount and (b) Indemnitee provides to Indemnitor reasonable detail of such Recoverable Amount. Upon any such draw, Indemnitor will have five (5) Business Days to replace any amount drawn on the Security. The Security contemplated in this Section 8 constitutes security for, but does not limit, Indemnitor's obligations or liabilities hereunder and shall not be Indemnitee's exclusive remedy for Indemnitor's breach of or failure to perform under this Agreement. Nor does the limitation on Indemnitee's ability to draw upon the Security only for Recoverable Amounts limit Indemnitor's obligations or liabilities hereunder.

(b) Indemnitor shall cause the renewal or replacement of the Security at least thirty (30) days before its expiration or termination. If the Security has not been renewed or replaced and less than thirty (30) days remain before its expiration or termination, then Indemnitee may draw the full undrawn amount of the Security.

(c) Indemnitor grants to Indemnitee a first priority continuing security interest, lien, and right and setoff in, to and against all Security posted with Indemnitee to secure Indemnitor's full, faithful and timely payment and performance of all of Indemnitor's obligations under this Agreement. Without limiting Indemnitee's other rights hereunder, upon a breach or default under this Agreement, Indemnitee may exercise the rights and remedies of Indemnitee as a secured party, exercise its rights of

setoff, and draw on any outstanding Security free from any claim or right of any nature whatsoever of Indemnitor or any person claiming through Indemnitor.

9. **Assignment**.

(a) Neither Indemnitor nor any Subsidiary may assign, in whole or in part, any of its obligations or liabilities under this Agreement without the prior written consent of Indemnitee, such consent not to be unreasonably withheld or delayed; provided, however, that (i) Indemnitor may assign this Agreement to an Affiliate to whom Indemnitor has assigned the Power Purchase Agreement pursuant to and in accordance with Section 16.1 of the Power Purchase Agreement, provided that such Affiliate assignee expressly assumes in writing all of Indemnitor's obligations hereunder in a form reasonably acceptable to Indemnitee and (ii) any Subsidiary may assign this Agreement to an Affiliate who is acquiring from such Subsidiary its Project, provided that (A) such Affiliate assignee expressly assumes in writing all of Subsidiary's obligations hereunder in a form reasonably acceptable to Indemnitee and (B) assignment by such Subsidiary is in accordance with Section 16.3 of the Power Purchase Agreement.

(b) Notwithstanding the foregoing, a Subsidiary may not assign all or substantially all of the assets constituting a Project, other than to a Person who expressly assumes in writing all of such Subsidiary's obligations hereunder in a form reasonably acceptable to Indemnitee.

10. **Subsidiary Joint and Several Liability**. Notwithstanding any provisions to the contrary contained in this Agreement, each Subsidiary that is a signatory to this Agreement shall be jointly and severally liable with Indemnitor, for all of Indemnitor's indemnity and payment obligations set forth in this Agreement. Each Subsidiary's execution of this Agreement shall be deemed to constitute its agreement to the terms of this Section 10 and those provisions expressly applicable to the Subsidiaries, including Sections 6 and 9. Nothing in this Section 10 shall limit or restrict in any respect the liability of Indemnitor under this Agreement, including in the event of failure of any Subsidiary to perform its obligations in accordance with this Section 10.

11. **Enforcement**. The Indemnified Parties may enforce the obligations of Indemnitor without first resorting to, or exhausting any other remedy; *provided*, *however*, that nothing herein shall prevent, limit or otherwise restrict Indemnitee from suing on the PSA or exercising any other rights and remedies thereunder. It is not necessary for Indemnitee to bring a claim or take any action under the PSA in order for Indemnitee or any of the other Indemnified Parties to exercise their rights pursuant to this Agreement. Indemnitor is fully liable for all obligations and liabilities under this Agreement and such liability is not subject to, restricted by or otherwise limited in any respect by the PSA, including by any limitations on liability set forth in the PSA.

12. **Set Off**.

(a) After exhausting the Security, including any timely replenishment of such Security as set forth in Section 8(a), Indemnitee shall have the right to setoff amounts due to Indemnitee or any other Indemnified Party under this Agreement against any and all amounts now or hereafter owed by Indemnitee to Indemnitor or any of the Subsidiaries (or any of their respective Affiliates), including any and all amounts or other compensation due and owing by Indemnitee under the Power Purchase Agreement, provided, however, that Indemnitee may only setoff amounts or other compensation due under the Power Purchase Agreement if such amount is a Recoverable Amount for which Indemnitee has provided reasonable detail to Indemnitor; provided further, that the limitation on Indemnitee's ability to set-off amounts or other compensation due under the Power Purchase Agreement only if such is a Recoverable Amount in no way limits Indemnitor's obligations or liabilities hereunder.

(b) If any dispute arises under this Section 12 which is not resolved in the ordinary course of business, the Party raising such dispute shall notify, in writing, the other Party of the dispute, which notification must include a written explanation of the dispute and the material details of the notifying Party's position as to the dispute (the "Dispute Notification"). Upon issuance of the Dispute Notification set forth in this Section 12:

(i) the Administrative Committee (as defined in the Power Purchase Agreement) shall meet within ten (10) Business Days of issuance of such Dispute Notification and in good faith attempt to resolve the dispute within ten (10) Business Days thereafter, and to produce written terms of settlement for the dispute (a "**Settlement Agreement**"). If the Administrative Committee is unable to resolve a dispute pursuant to this Section 12(b)(i), and produce a Settlement Agreement within thirty (30) Days after the date of their first meeting, or if no meeting of the Administrative Committee has taken place within fifteen (15) Days; then

(ii) each Party shall nominate a senior executive with authority to decide or resolve the matter in dispute and provide notice thereof to the other Party within five (5) Days after delivery of such notice; *provided*, *however*, that such senior executives shall not be involved in the day-to-day management of the transaction contemplated hereunder. Such senior executives shall meet within ten (10) Business Days of issuance of such dispute notification and in good faith attempt to resolve the dispute within ten (10) Business Days thereafter, and to produce a Settlement Agreement. If the senior executives are unable to resolve a dispute pursuant to this Section 12(b)(ii), and to produce a Settlement Agreement within thirty (30) Days after the date of their first meeting, or if no meeting of senior executives has taken place within fifteen (15) Days after both senior executives were nominated; then

(iii) either Party shall have the right to seek any remedies in law or in equity, subject to any applicable limitations of remedies or damages under this Agreement.

13. **Survival**. The obligations, agreements, covenants and liabilities of Indemnitor and the Subsidiaries under this Agreement shall fully survive indefinitely.

14. **Recitals**. The recitals are incorporated herein by reference.

15. **Interest**. Any amounts payable to Indemnitee or any other Indemnified Party under this Agreement shall become immediately due and payable on demand and, if not paid within thirty (30) days of such demand, shall bear interest at the lesser of (a) the "Federal Funds Rate" as determined by, and published on the public website of, the Federal Reserve Bank of New York on the date that such interest begins to accrue, or (b) the maximum legal rate which Indemnitor may by Law pay or the Indemnified Parties may charge and collect, from the date payment was due until but not including the date of payment.

16. **Waivers**. To the maximum extent permitted by applicable Law, Indemnitor relinquishes all rights and remedies accorded by applicable Law to indemnitors or guarantors, except any rights of subrogation which Indemnitor may have, *provided* that the indemnity provided for hereunder shall neither be contingent upon the existence of any such rights of subrogation nor subject to any claims or defenses whatsoever which may be asserted in connection with the enforcement or attempted enforcement of such subrogation rights, including: (a) any claim that such subrogation rights were abrogated by any acts of Indemnitee or of any other Indemnified Party; (b) the right to assert a counterclaim, other than a mandatory or compulsory counterclaim, in any action or proceeding brought against or by any Indemnified Party; (c) notice of acceptance hereof and of any action taken or omitted in reliance hereon; (d) presentment for payment, demand of payment, protest or notice of nonpayment or failure to perform or observe, or other

proof, or notice or demand; and (e) all homestead exemption rights against the obligations hereunder and the benefits of any statutes of limitations or repose.

17. **Subrogation**. Indemnitor shall take any and all reasonable actions, including institution of Action against third parties, necessary or appropriate to obtain reimbursement, payment or compensation from such Persons responsible for the presence of any Hazardous Materials at, in, on, under or near the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property or otherwise obligated by Law to bear the cost. In the event of a default of Indemnitor's obligations hereunder, the Indemnified Parties shall be and hereby are subrogated to all of Indemnitor's rights now or hereafter in such claims.

18. **Representations and Warranties**. Indemnitor and each Subsidiary represents and warrants that:

(a) it is a limited liability company duly formed, validly existing and in good standing under the Laws of the State of Delaware, and it has all requisite limited liability company power and authority to carry on its business as it is currently conducted;

(b) it has the full limited liability company authority to execute and deliver this Agreement and to perform its obligations hereunder;

(c) its execution and delivery of, and compliance with, this Agreement is in the ordinary course of business and the execution and delivery, and performance of its obligations under, this Agreement, does not and the consummation of the transactions contemplated hereby will not:

(i) conflict with or result in a breach of, or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under), its organizational documents;

(ii) conflict with, or result in a breach of, or constitute a default under (or constitute an event that, with notice or lapse of time or both, would constitute a default under) or give rise to a right of termination, cancellation, modification or acceleration of any obligation, to any put or call or similar rights, or to loss of a benefit, in each case, under any material Contract or material Permit to which it is a party or by which its assets are bound; or

(iii) conflict with, or result in a violation or breach, in each case, in any material respect of any applicable Law;

(d) there is no Action outstanding or pending or threatened, in each case, by it or against it, in each case (or in the aggregate), (i) relating to this Agreement; (ii) which would reasonably be expected to result in the issuance of an Order restraining, enjoining or otherwise prohibiting or making illegal the performance of its obligations hereunder; or (iii) would reasonably be expected to have a material adverse effect on its ability to carry on its business substantially as now conducted or to perform its obligations, agreements and covenants hereunder;

(e) it has obtained or made all consents, approvals, authorizations, waivers, licenses, registrations, declarations, qualifications, filings or notices of or to Persons, including Governmental Authorities, that are required in connection with the execution and delivery by it of this Agreement and the performance of its obligations, agreements and covenants hereunder;

(f) this Agreement has been duly executed and delivered by it and constitutes its valid, legal and binding obligations, enforceable against it in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, moratorium, reorganization or other similar laws affecting the enforcement of creditors' rights and subject to general equitable principles; and

(g) no petition or notice has been presented, no order has been made and no resolution has been passed for its bankruptcy, liquidation, winding-up or dissolution; no receiver, trustee, custodian or similar fiduciary has been appointed over the whole or any part of its assets or its income; and it has no plan or intention of, nor has it received any written notice that any other Person has any plan or intention of, filing, making or obtaining any such petition, notice, order or resolution or of seeking the appointment of a receiver, trustee, custodian or similar fiduciary.

19. **No Waiver.** No delay by Indemnitee or any other Indemnified Party in exercising any right, power or privilege under this Agreement shall operate as a waiver of any such right, power or privilege.

20. **Notices**. All notices or other communications required or provided to be sent by any party hereto shall be in writing and shall be sent by: (a) any nationally known overnight delivery service for next-day delivery; (b) delivered in person; or (c) by e-mail. A notice sent by delivery service shall be deemed received on the date noted as delivered on the receipt. A notice delivered in person shall be deemed effective on the date when received. A notice sent by email shall be effective if receipt is acknowledged by the intended recipient. All notices shall be addressed to the parties hereto at the addresses below:

If to Indemnitee: Consumers Energy Company
One Energy Plaza
Jackson, MI 49201
Attn: Robert Beach
Email: Robert.Beach@cmsenergy.com

and to: Consumers Energy Company
One Energy Plaza
Jackson, MI 49201
Attn: Erin Busby
Email: Erin.M.Busby@cmsenergy.com

with a copy to: Troutman Pepper Locke, LLP
401 9th Street, N.W.
Washington, D.C. 20004
Attn: Todd Coles, Esq.
Email: todd.coles@troutman.com

If to Indemnitor
or the Subsidiaries: Confluence Hydro, LLC
c/o Hull Street Energy, LLC
4747 Bethesda Avenue, Suite 1220
Bethesda, MD 20814
Attn: Legal Department; Charles Arsenault
Email: legal@hullstreetenergy.com; carsenault@hullstreetenergy.com

with a copy to: McGuireWoods LLP
500 E. Pratt Street, Suite 1000
Baltimore, MD 21202
Attn: Brian Kelly
Email: bkelly@mcguirewoods.com

Any address or name specified above may be changed by notice given to the addressee by the other party hereto in accordance with this Section 20. The inability to deliver notice because of a changed address of which no notice was given as provided above, or because of rejection or other refusal to accept any notice, shall be deemed to be the receipt of the notice as of the date of such inability to deliver or rejection or refusal to accept. Any notice to be given by any party hereto may be given by the counsel for such party.

21. **Duplicate Originals; Counterparts**. This Agreement may be executed in any number of duplicate originals and each duplicate original shall be deemed to be an original. This Agreement may be executed in several counterparts, each of which counterparts shall be deemed an original instrument and all of which together shall constitute a single agreement. The failure of any party hereto to execute this Agreement, or any counterpart hereof, shall not relieve the other signatories from their obligations hereunder.

22. **No Oral Change**. This Agreement, and any provisions hereof, may not be modified, amended, waived, extended, changed, discharged or terminated orally or by any act or failure to act on the part of Indemnitee or any other Indemnified Party, but only by an agreement in writing signed by Indemnitee and Indemnitor against whom enforcement of any modification, amendment, waiver, extension, change, discharge or termination is sought.

23. **Headings, Etc**. The headings and captions of various Sections of this Agreement are for convenience of reference only and are not to be construed as defining or limiting, in any way, the scope or intent of the provisions hereof.

24. **Successors and Assigns**. Subject to Section 9, this Agreement shall be binding upon and insure to the benefit of the parties hereto and their respective permitted successors and assigns.

25. **No Jury Trial; Venue**.

(a) Each party hereto agrees that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by Indemnitee or any other Indemnified Party on or with respect to this Agreement or which in any way relates, directly or indirectly, to this Agreement or any event or occurrence arising out of or in any way connected with this Agreement shall be tried only by a court and not by a jury. **TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY HERETO HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. EACH PARTY HERETO FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.**

(b) Each party hereto: (i) agrees that any Action arising out of or based upon this Agreement or the subject matter hereof shall be brought only in the courts of the State of Michigan or the United States District Court for the Eastern District of Michigan; (ii) irrevocably submits itself to the exclusive jurisdiction of the such courts for the purpose of any Action arising out of or based upon this Agreement or the subject matter hereof; (iii) waives, and agrees not to assert, by way of motion, as a defense

or otherwise, in any such Action, any claim that it is not subject personally to the jurisdiction of the above named courts, that its property is exempt or immune from attachment or execution, that the action is brought in an inconvenient forum, that the venue of such Action is improper or that this Agreement or the subject matter hereof may not be enforced in or by such court; (iv) consents to the transfer of any Action filed in another court to an applicable court identified in clause (i) above; and (v) consents to service of process by registered mail at the address to which notices are to be given if personal service is not, with the exercise of commercially reasonable efforts, possible.

26. **Rights Cumulative**. The rights and remedies herein provided are cumulative and not exclusive of any rights or remedies which Indemnitee or any other Indemnified Party has under any Contract or at law or in equity.

27. **Inapplicable Provisions**. If any term, condition or covenant of this Agreement shall be held to be invalid, illegal or unenforceable in any respect, this Agreement shall be construed without such provision.

28. **Governing Law**. THIS AGREEMENT SHALL BE GOVERNED AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF MICHIGAN WITHOUT REGARD TO THE PRINCIPLES OF CHOICE OF LAW OR CONFLICTS OF LAW.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, this Agreement has been executed by each party hereto and is effective as of the day and year first above written.

INDEMNITOR:

CONFLUENCE HYDRO, LLC

By:_____
Name:
Title:

INDEMNITEE:

CONSUMERS ENERGY COMPANY

By:_____
Name:
Title:

SUBSIDIARIES:

[_____]

By:_____
Name:
Title:

EXHIBIT M-2

Memorandum of Environmental Indemnity Agreement

MEMORANDUM OF ENVIRONMENTAL INDEMNITY AGREEMENT

THE STATE OF MICHIGAN §
COUNTY OF _____ §

KNOW ALL PERSONS BY THESE PRESENTS: §

THIS MEMORANDUM OF ENVIRONMENTAL INDEMNITY AGREEMENT (this "**Memorandum**"), is made, dated and effective as of _____, 20___ (the "**Effective Date**"), by **CONFLUENCE HYDRO, LLC**, a Delaware limited liability company of _____ ("**Indemnitor**"), and each of the entities who have executed the Agreement (as defined below) pursuant to Section 10 of the Agreement (each, a "**Subsidiary**" and, collectively, the "**Subsidiaries**"), and **CONSUMERS ENERGY COMPANY**, a Michigan corporation, of _____ ("**Indemnitee**"), and the other Indemnified Parties (as defined in the Agreement) (each a "**Party**" and, collectively, the "**Parties**"), with regards to the following:

1. PSA. Indemnitor and Indemnitee are parties to that certain Purchase and Sale Agreement, dated as of September 3, 2025 (the "**PSA**"), pursuant to which Indemnitee will sell and transfer, and Indemnitor will purchase and acquire, the Project Assets, on the terms and subject to the conditions provided therein.

2. Environmental Indemnity Agreement. Indemnitor, Subsidiaries, and Indemnitee are parties to that certain Environmental Indemnity Agreement dated as of even date herewith (the "**Agreement**"), pursuant to which Indemnitor agreed to provide certain indemnifications, covenants, agreements, representations, and warranties described in the Agreement for the benefit of Indemnitee and the other Indemnified Parties in connection with the Project Assets including certain real property described on Exhibit A attached hereto and by reference made a part hereof. All terms not defined in this Memorandum shall have the meaning ascribed to such terms in the Agreement.

3. Environmental Claim Covenants. Indemnitor has covenanted and agreed that to the extent Indemnitor receives notice from Indemnitee, or otherwise becomes aware, of an Environmental Claim, Indemnitor shall, at its sole cost and expense:

(a) promptly, but in no event later than the Environmental Claim Notice Date, inform Indemnitee in writing of the existence, nature, and circumstances of the Environmental Claim, which notice shall include a copy of any written communication received by Indemnitor providing notice of or otherwise asserting the Environmental Claim;

(b) promptly, but in no event later than the Environmental Claim Notice Date, confirm in writing Indemnitor's commitment and obligation to indemnify, defend and hold harmless Indemnitee and the other Indemnified Parties from and against such Environmental Claim pursuant to the terms of the Agreement;

(c) promptly, but in no event later than ten (10) Business Days after the Environmental Claim Notice Date, inform Indemnitee how Indemnitor will respond to and defend against such Environmental Claim;

(d) on a quarterly basis, and as otherwise reasonably requested by Indemnitee, provide a progress report of such Environmental Claim to Indemnitee and share with Indemnitee any third-party reports and other results (but excluding any privileged attorney-client communications) associated with such Environmental Claim or Indemnitor's response to such Environmental Claim; and

(e) promptly after received or issued by Indemnitor provide to Indemnitee copies of any written notices or other written communications received or issued by or on behalf of Indemnitor from the Person making such Environmental Claim.

4. Indemnified Rights/Cooperation and Access.

(a) Indemnitor shall cooperate with and, promptly upon written request by Indemnitee and at no cost to Indemnitee or any of the other Indemnified Parties, provide or cause to be provided to Indemnitee and any Person(s) designated by Indemnitee, including Environmental Consultants, access to the Project Assets, including access to the Projects, the Project Assets and the Calkins Bridge Project Easement Reservation Real Property, as applicable, subject to all third party rights that affect the access, use and operations of the Projects, the Project Assets or the Calkins Bridge Project Easement Reservation Real Property, for purposes of assessing any Environmental Claim that Indemnitee becomes aware of, including after Indemnitee is provided written notice as provided in the Agreement; provided, however, that any assessment of any Environmental Claim performed by Indemnitee or its Environmental Consultant pursuant to Section 3(a) of the Agreement, when the conditions in Section 30(i) or Section 30(ii) of the Agreement are not outstanding, shall be performed at the sole cost and expense of Indemnitee.

(b) If (i) Indemnitor denies its obligation or fails to indemnify, defend and hold harmless Indemnitee and the other Indemnified Parties against Environmental Losses in respect of an Environmental Claim pursuant to the Agreement, or (ii) if Indemnitor otherwise has a Material Indemnification Default, and Indemnitor fails to cure such Material Indemnification Default within thirty (30) Business Days after written notice thereof, then Indemnitee and any Environmental Consultant shall have the right, but not the obligation, (i) to communicate with the Person making the Environmental Claims, (ii) to enter upon the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, at all reasonable times, subject to all third party rights that affect the access, use and operations of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, and (iii) to assess any and all aspects of such Environmental Claim and Environmental Losses, including the right to conduct any Environmental assessments and/or audit (the scope of which shall be limited to the designated Environmental Claims and Environmental Losses), take samples of soil, sediment, groundwater or other air, water or building materials, and reasonably conduct such other invasive tests as Indemnitee or its Environmental Consultants deem necessary or appropriate; provided, however, that Indemnitee and its Environmental Consultants shall use good faith efforts to prudently assess Environmental Claims and Environmental Losses in accordance with all Environmental Laws under Section 3(b) of the Agreement. Once Indemnitee exercises its rights to manage an Environmental Claim or an Environmental Loss as set forth in the Agreement, Indemnitor shall no longer manage such Environmental

Claim or Environmental Loss, until such time as Indemnitee may, upon notice to Indemnitor, relinquish its rights to manage such Environmental Claim or Environmental Loss; provided, however, that the obligations of Indemnitor under the Agreement shall not be negated or otherwise affected by the election of Indemnitee. For avoidance of doubt, the provisions of Section 3(b) of the Agreement in no way limit Indemnitor's indemnification obligations under Section 4(a) of the Agreement. Upon written demand, Indemnitor shall pay or, in the sole and absolute discretion of Indemnitee, reimburse, Indemnitee for the payment of all reasonable fees and disbursements made to Environmental Consultants in connection with the exercise by Indemnitee of its rights set forth in the Agreement.

(c) Indemnitee acknowledges that Indemnitor shall have sole control over the means by which Indemnitor complies with the obligation set forth in the Agreement, so long as Indemnitor: (i) has timely and affirmatively confirmed the Environmental Claim is subject to indemnification by Indemnitor pursuant to the Agreement; (ii) has materially complied with and continues to materially comply with, and is not in material breach or default of, its obligations under the Agreement; (iii) without limiting Indemnitor's right to assert defenses to, or pursue a claim under insurance policies respecting, the Environmental Claim, has timely responded and continues to timely respond to any demand, notice, pleading, and the like in connection with any proceeding regarding an Environmental Claim; and (iv) conducts and performs such activities in material compliance with the terms of the Agreement; *provided*, *however*, in no event shall Indemnitor waive or purport to waive on behalf of Indemnitee or any other Indemnified Party any defense to any Environmental Claim allegedly resulting from the acts and/or omissions of Indemnitee or any other Indemnified Party or assert that Indemnitee or any other Indemnified Party is a potentially responsible party or liable for such Environmental Claim without Indemnitee's prior written consent. Indemnitor agrees that it shall consult with Indemnitee in advance on any response to an Environmental Claim that reasonably may cause Indemnitee's or any other Indemnified Party's liabilities, obligations and operations and/or defenses to same to be adversely affected.

(d) Indemnitor may condition access by Environmental Consultants, Indemnitee, or any Indemnified Party to the Project Assets on (i) avoiding unreasonable interference with Subsidiaries' operations, (ii) delivery of one or more certificates confirming that commercially reasonable insurance coverage in favor of one or more Subsidiaries is in place, and/or (iii) indemnification respecting Losses arising out of such access (other than Losses from the mere discovery of conditions existing as of the time of access).

5. Indemnification.

(a) Indemnitor covenants and agrees, at its sole cost and expense, to defend, indemnify, reimburse and hold harmless each Indemnified Party from and against any and all Environmental Losses incurred or suffered by any Indemnified Party and against any Environmental Claims arising from, related to or suffered as a result of any Assumed Environmental Liabilities (whether sounding in contract, tort, statute, or whether at Law or in equity, or otherwise), including any and all Environmental Losses imposed upon, incurred or suffered by, or Environmental Claim asserted against, any Indemnified Parties in any way, directly or indirectly, arising out of, related to or suffered as a result of:

(i) any presence, Release or threatened Release of any Hazardous Materials in, on, above, onto, under, or emanating or migrating from the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(ii) any actual or proposed Remediation of any Hazardous Substances at any time located in, on, above, onto, under, or emanating or migrating from the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, whether or not such Remediation is voluntary (provided that such voluntary Remediation is undertaken to comply with Environmental Law) or pursuant to court or administrative order, including any removal, remedial or corrective action;

(iii) any past, present, or future non-compliance or violations of any Environmental Law or Environmental Permit in connection with the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property, or operations thereon, including any failure by Indemnitor or any Indemnitor Parties to comply with any Environmental Law or Environmental Permit;

(iv) any act or omission of any Indemnitor Party in accepting any Hazardous Substances for transport to disposal or treatment facilities, incineration vessels or sites selected by an Indemnitor Party;

(v) any act or omission of any Indemnitor Party in arranging for disposal or treatment, or arranging with a transporter for transport, disposal or treatment, of Hazardous Substances relating to the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(vi) any personal injury, wrongful death, property or other damage arising under any statutory or common law or tort law theory by reason of the wrongful acts or omissions of an Indemnitor Party with respect to Environmental matters, including damages assessed for private or public nuisance or for the conducting of an abnormally dangerous activity on or near the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation Real Property;

(vii) the imposition, recording or filing or the threatened imposition, recording or filing of any Lien resulting from an Environmental Claim encumbering the Reserved Easements or the Temporary Substation Easement which would interfere with Indemnitee's rights under the Reserved Easement or the Temporary Substation Easement and/or Indemnitee's personal property, fixtures, and equipment; or

(viii) any administrative processes or proceedings or judicial proceedings in any way connected with any matter indemnified in the Agreement.

(b) If any Environmental Claim for which Indemnitee or an Indemnified Party might seek indemnification from Indemnitor under Section 4(a) of the Agreement is threatened or asserted against Indemnitee or an Indemnified Party, then Indemnitee will give Indemnitor written notice thereof and thereafter Indemnitor shall defend, indemnify, reimburse and hold harmless Indemnitee and each other Indemnified Party from and against any and all Environmental Claims and associated Environmental Losses in accordance with Section 4(a) of the Agreement; *provided* that the failure to so notify Indemnitor shall not relieve Indemnitor of its obligations thereunder.

6. Unimpaired Liability. The obligations and liability of Indemnitor and the Subsidiaries under the Agreement shall in no way be limited or impaired in any respect by any subsequent sale, directly or indirectly, of any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation or any or all of the ownership interest in any Person owning any or all of the Projects, the

Project Assets, or the Calkins Bridge Project Easement Reservation who succeeds Indemnitor or any Subsidiary as owner of any or all of the Projects, the Project Assets, or the Calkins Bridge Project Easement Reservation.

7. Pollution Legal Liability Insurance. Indemnitor shall deliver to Indemnitee, and thereafter maintain during the term of the Agreement, the PLLI.

8. Security. Indemnitor shall deliver to Indemnitee and thereafter maintain and replace, as applicable, the Security pursuant to the terms and conditions of Section 8 of the Agreement. Indemnitee shall be entitled to draw upon the Security pursuant to the terms and conditions of Section 8 of the Agreement. Indemnitee shall have a first priority continuing security interest, lien, and right and setoff in, to and against all Security posted with Indemnitee pursuant to the terms and conditions of Section 8 of the Agreement.

9. Assignment. Neither Indemnitor nor any Subsidiary may assign, in whole or in part, any of its obligations or liabilities under the Agreement without the prior written consent of Indemnitee, such consent not to be unreasonably withheld or delayed; provided, however, that (i) Indemnitor may assign the Agreement to an Affiliate pursuant to the requirements set forth in the Agreement and (ii) any Subsidiary may assign this Agreement to an Affiliate who is acquiring from such Subsidiary its Project pursuant to the requirements set forth in the Agreement.

10. Subsidiary Joint and Several Liability. Pursuant to the terms and provisions of the Agreement, each Subsidiary that is a signatory to the Agreement shall be jointly and severally liable with Indemnitor, for all of Indemnitor's indemnity and payment obligations set forth in this Agreement.

11. Set Off. Indemnitee shall have certain rights of setoff with respect to amounts due to Indemnitee or any other Indemnified Party, as set forth in Section 11 of the Agreement.

12. Subrogation. Indemnitor shall take any and all reasonable actions, including institution of Action against third parties, necessary or appropriate to obtain reimbursement, payment or compensation from such Persons responsible for the presence of any Hazardous Materials at, in, on, under or near the Fee Simple Real Property or the Calkins Bridge Project Easement Reservation Real Property or otherwise obligated by Law to bear the cost. In the event of a default of Indemnitor's obligations under the Agreement, the Indemnified Parties shall be and hereby are subrogated to all of Indemnitor's rights now or hereafter in such claims.

13. Conflicts. This Memorandum is subject to the terms, conditions and provisions of the Agreement, which is incorporated herein by reference as though set out here in full. The Agreement shall control in the event of any conflict with this Memorandum.

14. Counterparts. This Memorandum may be executed in counterparts, each of which shall be deemed an original and all of which when taken together shall constitute one and the same document.

[Signatures appear on following pages]

IN WITNESS WHEREOF, the parties have executed this Memorandum to be effective as of the date first written above.

INDEMNITOR:

_____

By: _____

Name:
Title:

STATE OF _____ §
§
COUNTY OF _____ §

This instrument was acknowledged before me by _____, as _____ of _____, on behalf of said company, and known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.

Given under my hand and seal this ___ day of _____, 20___.

_____
_____, Notary Public
_____ County, _____
Acting in the County of _____
My Commission Expires: _____
(Notary Seal)

[Signatures continue on following pages]

INDEMNITEE:

_____
*By:*_____

Name:
Title:

STATE OF _____ §
§
COUNTY OF _____ §

This instrument was acknowledged before me by _____, as _____ of _____, on behalf of said company, and known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.
Given under my hand and seal this ___ day of _____, 20___.

_____
_____, Notary Public
_____ County, _____
Acting in the County of _____
My Commission Expires: _____
(Notary Seal)

[Signatures continue on following pages]

SUBSIDIARIES:

[_____]

By:_____
Name:
Title:

STATE OF _____ §
§
COUNTY OF _____ §

This instrument was acknowledged before me by _____, as _____ of _____, on behalf of said company, and known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and consideration therein expressed.
Given under my hand and seal this ___ day of _____, 20___.

_____
_____, Notary Public
_____ County, _____
Acting in the County of _____
My Commission Expires: _____
(Notary Seal)

Parcel ID #: _____

Prepared by and after recording return to:
_____
_____
_____
_____

Reference: Parcel Number _____

REDACTED

EXHIBIT "A" to
MEMORANDUM OF ENVIRONMENTAL INDEMNITY AGREEMENT

EXHIBIT N

Pollution Legal Liability Insurance Policy

Policy Specifications	Minimum Requirements
Term	At least 10 years, with an option to renew for an additional 10 year term (or otherwise as the market allows if 10 years or an option to renew is not attainable).
Total Policy Limit	Not less than $50,000,000.00 of aggregate coverage for environmental matters
Premium	No more than $1,500,000.00
Coverage Included (Primary coverage)	• Claims-made policy. • Coverage for environmental cleanup costs triggered by government mandate. • Third Party Claims for bodily injury, property damage (including natural resource damages), other environmental damage, and claims expenses. • Coverage to include first party and third party cleanup costs for environmental investigation and remediation for both known and unknown pollution conditions. • Coverage to include costs associated with civil fines, civil penalties, and punitive damages. • Coverage must include cleanup costs, damages, and claims expenses related to any condition at any owned or non-owned location (i.e., both onsite and offsite cleanup costs). • Coverage must include a schedule of insured contracts, including, without limitation the Environmental Indemnity Agreement between the parties.
Other Endorsements	• No exclusions for sediment conditions and any hazardous materials or hazardous substances discovered in sediment, subject to select known conditions as set forth by the market.
Covered Properties	Each of the following hydroelectric facilities and the related FERC Boundary Parcels associated therewith: • Alcona Project • Calkins Bridge Project • Cooke Project • Croton Project

	• Five Channels Project • Foote Project • Hardy Project • Hodenpyl Project • Loud Project • Mio Project • Rogers Project • Tippy Project • Webber Project
Terms and Conditions	• Consumers Energy Company, its affiliates, and assigns as Additional Insureds

EXHIBIT O

Reserved Easements

Alcona Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of an existing electric facilities easement areas located in Sections 14,15, and 16, Town 25 North, Range 05 East, Curtis W. Township, Alcona County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the East one-quarter corner of said Section 15; thence North 89°18'13" West, 1330.69 feet, along the East and West one-quarter line of said Section 15, to a point on the East one-eighth line of said Section 15; thence North 00°44'57" West, 31.67 feet, along the East one-eighth line of said Section 15, to the POINT OF BEGINNING; thence South 89°30'25" East, 493.14 feet; thence North 75°40'59" East, 1,058.42 feet, to Reference Point "A"; thence North 06°27'35" East, 342.49 feet; thence South 87°55'01" East, 275.07 feet; thence North 54°34'27" East, 144.29 feet; thence South 66°37'06" East, 71.28 feet; thence South 68°37'01" East, 99.72 feet, to Reference Point "B"; thence North 13°14'11" East, 106.76 feet, to Reference Point "C"; thence South 75°35'17" East, 115.58 feet; thence South 75°51'18" East, 186.19 feet; thence North 68°12'52" East, 935.10 feet; thence North 81°39'32" East, 880.81 feet; thence North 74°18'53" East, 214.13 feet, to Reference Point "F"; thence continuing North 74°18'53" East, 223.54 feet; thence North 83°34'35" East, 455.17 feet, to Reference Point "E"; thence continuing North 83°34'35" East, 53.65 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence North 75°40'59" East, 140.16 feet; thence South 29°26'10" East, 78.82 feet, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 68°55'26" East, 83.13 feet, to a point on the Westerly Alcona Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence South 46°53'10" East, 105.56 feet, to a point on the Westerly Alcona Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 75°27'33" West, 48.28 feet, to Reference Point "D"; thence South 87°20'25" West, 73.32 feet; thence South 87°58'51" West, 46.20 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence South 12°44'44" East, 20.37 feet; thence North 86°33'11" West, 13.60 feet; thence North 84°49'53" West, 32.68 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "E"; thence South 01°39'24" East, 64.20 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

LVD2
Commencing at the East one-quarter corner of said Section 16; thence North 00°13'38" West, 66.32 feet, along the East line of said Section 16, to the POINT OF BEGINNING; thence South 89°35'22" West, 2,622.77 feet, to a point on the North and South one-quarter line of said Section 16, and to the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas

The centerlines of existing underground electric facilities easement areas located in Sections 9,10,11, and 14, Town 25 North, Range 05 East, Curtis W. Township, Alcona County, Michigan, said centerlines being described as follows:

UG Elec.1
BEGINNING at previously stated Reference Point "F"; thence South 62°05'27" East, 18.17 feet; thence North 63°14'10" East, 51.35 feet; thence Northeasterly, 908.30 feet, along the arc of a 562.00 foot radius curve to the left, the central angle of which is 92°36'02", and the long chord of which bears North 16°56'09" East, 812.62 feet; thence North 29°21'52" West, 92.83 feet, more or less, to a point on the North line of the South one-half of the Northwest one-quarter of the Northeast one-quarter, and to the POINT OF ENDING.

UG Elec.2
Commencing at the South one-quarter corner of said Section 11; thence North 01°41'09" West, 1997.72 feet, along the North and South one-quarter line of said Section 11, to the POINT OF BEGINNING; thence Northwesterly, 376.77 feet, along the arc of a 764.28 feet radius curve to the right, the central angle of which is 28°14'44", and the long chord of which bears North 83°28'26" West, 372.97 feet; thence North 69°21'04" West, 110.78 feet; thence North 52°26'14" West, 40.96 feet; thence North 37°29'11" West, 20.29 feet; thence North 45°33'53" West, 69.87 feet; thence North 41°41'25" West, 208.02 feet; thence North 39°39'56" West, 376.67 feet, more or less, to a point on the East and West one-quarter line of said Section 11, and to Reference Point "I", and the POINT OF ENDING.

UG Elec.3
Commencing at previously stated Reference Point "I"; thence North 39°41'41" West, 609.23 feet, to a point on the West one-eighth line of said Section 11, to the POINT OF BEGINNING; thence North 39°57'17" West, 65.16 feet; thence North 32°54'21" West, 175.68 feet, to Reference Point "G"; thence North 39°39'22" West, 429.32 feet; thence North 39°32'33" West, 375.06 feet; thence North 38°42'00" West, 200.95 feet; thence North 09°19'51" West, 30.55 feet; thence North 42°41'32" East, 104.08 feet; thence North 52°27'09" West, 431.16 feet; thence North 49°22'42" West, 143.16 feet; thence North 41°22'33" West, 288.33 feet; thence North 39°13'26" West, 327.49 feet; thence North 39°33'47" West, 244.79 feet, more or less, to a point on the North line of said Section 10, and to Reference Point "H", and the POINT OF ENDING.

And also Commencing at previously stated Reference Point "G"; thence South 24°15'51" West, 203.61 feet; thence South 18°50'14" West, 70.46 feet; thence South 08°35'41" West, 78.74 feet; thence South 29°33'03" East, 60.27 feet; thence South 39°26'12" East, 55.61 feet; thence South 21°44'21" East, 80.41 feet; thence South 26°23'59" East, 76.78 feet; thence South 26°59'44" West, 80.66 feet; thence South 05°34'28" East,

77.57 feet; thence South 05°50'40" West, 93.14 feet; thence South 10°49'24" West, 86.09 feet; thence South 25°49'30" West, 87.86 feet; thence South 52°13'30" East, 85.79 feet, to the POINT OF ENDING.

And also Commencing at previously stated Reference Point "G"; thence South 58°57'40" West, 73.44 feet, to the POINT OF ENDING.

UG Elec.4
Commencing at previously stated Reference Point "H"; thence South 89°32'57" West, 256.60 feet, along the North line of said Section 10, to the POINT OF BEGINNING; thence South 36°14'39" West, 265.60 feet; thence South 30°39'29" West, 262.63 feet; thence South 08°40'47" West, 56.90 feet; thence South 30°08'20" West, 219.12 feet; thence South 62°15'00" West, 220.70 feet; thence South 48°55'52" West, 77.48 feet; thence South 30°03'19" West, 219.76 feet; thence South 37°37'40" West, 200.32 feet; thence South 36°00'44" East, 55.26 feet; thence South 83°48'25" West, 79.77 feet; thence South 36°27'03" West, 103.97 feet; thence South 30°13'14" West, 170.91 feet; thence South 33°08'43" West, 200.01 feet; thence South 59°36'26" West, 71.43 feet; thence South 84°11'38" West, 64.70 feet; thence North 75°56'53" West, 176.07 feet; thence North 80°20'44" West, 80.15 feet; thence North 89°49'37" West, 80.68 feet; thence North 89°53'59" West, 81.33 feet; thence North 79°36'02" West, 109.43 feet; thence North 20°34'48" West, 29.42 feet, to the POINT OF ENDING.

UG Elec.5
Commencing at the North one-quarter corner of said Section 9; thence South 01°12'57" East, 425.25 feet, along the North and South one-quarter line of said Section 9; thence North 88°47'03" East, 1276.49 feet, to a point on the East one-eighth line of said Section 9, and to the POINT OF BEGINNING; thence North 73°20'18" East, 194.85 feet; thence North 80°09'08" East, 13.68 feet; thence South 74°50'25" East, 13.42 feet; thence South 51°59'59" East, 56.14 feet, to the POINT OF ENDING.

Legal Description: Alcona Substation Easement
A substation easement located in Section 14, Town 25 North, Range 5 East, Curtis W. Township, Alcona County, Michigan, more fully described as follows:
Commencing at the West one-quarter corner of said Section 14; thence North 88°13'06" East, 995.64 feet, along the East and West one-quarter line of said Section 14; thence North 01°46'54" West, 475.17 feet; to the POINT OF BEGINNING; thence North 68°29'55" West, 180.00 feet; thence North 21°11'02" East, 180.00 feet; thence South 68°29'55" East, 180.00 feet; thence South 21°11'02" West, 180.00 feet, to the POINT OF BEGINNING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in the
Northwest one-quarter of Section 14, Town 25 North, Range 5 East, Curtis W. Township, Alcona County, Michigan, said centerline described as:

Commencing at the West one-quarter corner of said Section 14; thence North 88°13'06" East, 1005.52 feet, along the East and West one-quarter line of said Section 14; thence North 01°46'54" West, 600.49 feet, to a point on the Easterly Alcona substation fenceline, and to the POINT OF BEGINNING; thence South

69°51'23" East, 47.37 feet; thence South 60°53'09" East, 31.95 feet; thence South 63°18'29" East, 70.97 feet; thence South 68°42'57" East, 166.07 feet; thence South 65°17'24" East, 69.30 feet; thence South 61°45'47" East, 171.20 feet; thence South 56°24'06" East, 27.14 feet, more or less, to a point on the centerline of Bamfield Road, and to the POINT OF ENDING.

The sidelines of said 20.00 foot wide easement centerline, are to be extended or shortened to meet at angle points beginning at points opposite of and perpendicular to the POINT OF BEGINNING, and ending on the centerline of Bamfield Road.

Calkins Project

Legal Description: Centerline for Existing LVD Line 1 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northwest 1/4 of Section 15, Township 2 North, Range 14 West, Valley Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northwest Corner of said Section 15; thence South 88° 07' 00" East 533.36 feet along the North Line of said Section 15; thence South 01° 53' 13" West 212.07 feet; thence South 85° 41' 17" East 15.49 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence South 85° 41' 17" East 115.56 feet to Reference Point 'A'; thence South 02° 12' 45" East 163.09 feet; thence North 63° 21' 13" East 512.89 feet to Reference Point 'B'; thence South 65° 17' 56" East 478.15 feet; thence South 74° 11' 45" East 313.53 feet, more or less, to the Point of Ending.

AND

Beginning at Reference Point 'B'; thence North 87° 42' 31" West 163.02 feet to the Point of Ending.

AND

A Proposed LVD line Commencing at Reference Point 'A', thence South 24° 08' 03" West 146.15 feet to Reference Point 'C'; thence South 65° 51' 57" East 72.38 feet to the Point of Ending.

AND

A Proposed LVD line Commencing at Reference Point 'C'; thence North 65° 51' 57" West 76.83 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 2 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 13, Township 2 North, Range 14 West, Valley Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the East 1/4 Corner of said Section 13; thence South 00° 32' 23" East 8.24 feet along the East Line of said Section 13; thence North 79° 50' 15" West 90.48 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence North 79° 50' 15" West 423.57 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 22W

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 19, and the Northwest 1/4 of Section 20, both Sections being in Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northeast Corner of said Section 19; thence South 00° 39' 19" East, along the East Line of Said Section 19, 1476.27 feet, more or less, to the FERC Project Boundary; thence South 62° 14'

27” West, along said FERC Project Boundary, 78.93 feet to the Point of Beginning; thence South 20° 29’ 51” East 484.45 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 3 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northwest 1/4 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the Northwest Corner of said Section 28; thence South 89° 50’ 37” East 128.04 feet along the North Line of said Section 28; thence South 76° 41’ 55” East 88.23 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence South 76° 41’ 55” East 285.28 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 4 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the North 1/2 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the West 1/4 Corner of said Section 28; thence North 00° 50’ 42” West 463.94 feet along the West Line of said Section 28; thence North 89° 09’ 18” East 2675.89 feet; thence North 06° 55’ 28” West 361.19 feet; thence North 54° 33’ 05” East 33.52 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence North 54° 33’ 05” East 127.14 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Legal Description: Centerline for Existing LVD Line 5 Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the North 1/2 of Section 28, Township 2 North, Range 13 West, Allegan Township, Allegan County, Michigan, said centerline described as follows:

Commencing at the West 1/4 Corner of said Section 28; thence North 00° 50’ 42” West 463.94 feet along the West Line of said Section 28; thence North 89° 09’ 18” East 2675.89 feet; thence South 52° 13’ 12” East 95.92 feet, more or less, to the FERC Project Boundary and the Point of Beginning; thence South 52° 13’ 12” East 270.59 feet, more or less, to the FERC Project Boundary and the Point of Ending.

Cooke Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 15, 21, and 29, Town 24 North, Range 07 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the South one-quarter corner of said Section 15, thence South 89°43'53" East, 134.46 feet, along the South line of said Section 15; thence North 00°16'11" East, 1003.77 feet; thence South 89°43'49" East, 383.27 feet, to the POINT OF BEGINNING; thence North 01°14'58" West, 276.13 feet; thence North 50°33'57" West, 48.89 feet, to Reference Point "D"; thence North 51°12'46" West, 194.61 feet; thence North 68°08'42" West, 173.94 feet; thence South 62°40'53" West, 492.54 feet; thence South 26°59'48" East, 141.38 feet; thence South 62°01'37" West, 1260.23 feet, to Reference Point "G"; thence continuing

South 62°01'37" West, 10.31 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.
And also BEGINNING at previously stated Reference Point "G"; thence South 00°27'56" East, 541.29 feet, more or less, to a point on the South line of said Section 15, and to the POINT OF ENDING.
And also BEGINNING at previously stated Reference Point "D"; thence South 85°32'18" West, 7.60 feet; thence South 54°58'50" West, 213.43 feet, to the POINT OF ENDING.

LVD2
BEGINNING at previously stated Reference Point "D"; thence North 12°24'45" East, 390.56 feet, to Reference Point "E"; thence North 65°36'53" East, 172.21 feet; thence North 11°28'51" East, 851.61 feet, to Reference Point "K"; thence North 02°01'58" West, 637.79 feet, more or less, to the North line of the South one-half of the Southwest one-quarter of the Northeast one-quarter, an the POINT OF ENDING.
And also BEGINNING at previously stated Reference Point "E"; thence South 79°49'32" West, 30.80 feet, to a point on the Easterly Cooke Dam substation fence line, and to the POINT OF ENDING.
And also BEGINNING at previously stated Reference Point "K"; thence North 79°20'58" East, 286.64 feet; thence North 54°57'12" East, 177.18 feet, more or less, to a point on the East one-eighth line of said Section 15, and the POINT OF ENDING.

LVD3
Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 1231.39 feet, along the West line of said Section 21; thence South 89°29'12" East, 50.65 feet, to a point on the East line of the Plat of Cooke Basin Subdivision No. 1, and to the POINT OF BEGINNING; thence North 88°30'38" East, 36.00 feet, to Reference Point "H"; thence North 73°30'37" East, 118.55 feet, more or less, to a point on a line being described as lying parallel with and 200.00 feet East of the West line of said Section 21, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 01°09'56" West, 353.17 feet; thence North 02°32'03" West, 121.57 feet; thence North 01°15'43" West, 170.13 feet: thence North 02°13'26" West, 173.28 feet, to Reference Point "I"; thence North 01°17'14" West, 172.13 feet, to Reference Point "J": thence North 01°36'59" West, 242.62 feet, more or less, to a point on the North line of said Section 21, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence South 88°01'53" West, 35.23 feet, more or less, to a point on the easterly line of the Plat of Cooke Basin Subdivision No. 1, and the POINT OF ENDING.

And also Beginning at previously stated Reference Point "J"; thence South 11°43'09" East, 703.88 feet, more or less, to a point on a line being described as lying parallel with and 200.00 feet East of the West line of said Section 21, and to the POINT OF ENDING.

LVD4
Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 5046.02 feet, along the West line of said Section 21; thence South 00°11'59" East, 1238.73 feet, along the East line of said Section 29; thence South 89°57'28" West, 1258.91 feet, to a point on the East one-eighth line of said Section 29, and to the POINT OF BEGINNING; thence South 44°13'10" West, 84.13 feet; thence South 35°37'28"

West, 43.04 feet, more or less, to a point on the North one-eighth line of said Section 29, and to the POINT OF ENDING.

Legal Description: Monument Substation Easement at Cooke Dam
An easement in part of the Southeast one-quarter of Section 15, Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:
Commencing at the Southeast corner of said Section 15; thence North 89° 43'53" West, 1900.11 feet, along the South line of said Section 15; thence North 00°16'07" East, 804.18 feet, to the POINT OF BEGINNING; thence North 89°59'58" West, 350.00 feet; thence North 00°00'02" East, 350.00 feet; thence South 89°59'58" East, 350.00 feet; thence South 00°00'02" West, 350.00 feet, to the POINT OF BEGINNING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in Northwest one-quarter of the Southeast one quarter of said Section 15; Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:
Commencing at the South one-quarter corner of said Section 15; thence South 89°43'53" East, 134.46 feet, along the South line of said Section 15; thence North 00°16'11" East, 1442.82 feet, to the POINT OF BEGINNING; thence along the centerline of the said 20 foot wide access easement centerline the following three (3) courses; North 64°06'29" East, 101.77 feet; thence South 46°09'11" East, 132.25 feet; thence South 26°42'20" East, 273.53 feet; to the POINT OF ENDING.

Legal Description: Centerline for existing underground Electric Facilities Area
The centerline of an existing underground electric facilities easement area located in the Southwest one-quarter of said Section 15, Township 24 North, Range 7 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point "G"; thence North 08°08'14" West, 54.32 feet; thence North 05°01'13" East, 14.18 feet; thence North 28°45'42" East, 27.93 feet; thence North 28°02'40" West, 22.79 feet; thence North 40°26'21" West, 9.30 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Section 15, and 29, Town 24 North, Range 07 East, Oscoda Township, Iosco County, Michigan, more particularly described as follows:
46kV Line 29T (Segment 1)

Commencing at the South one-quarter corner of said Section 15; thence South 89°43'53" East, 490.92 feet, along the South line of said Section 15, to the POINT OF BEGINNING; thence North 01°23'51" West, 918.27 feet, to Reference Point "A"; thence North 01°28'47" East, 618.22 feet, to Reference Point "B"; thence North 01°44'26" East, 129.01 feet, to a point on the Southerly fence line of the Cooke Dam Substation, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 76°00'12" West, 211.16 feet; thence South 61°58'19" West, 1823.91 feet, more or less, to a point on the West one-eighth line of said Section 15, and to the POINT OF ENDING.

46kV Line 29AI

BEGINNING at previously stated Reference Point "A"; thence North 88°45'18" East, 55.41 feet; thence North 02°00'24" West, 33.76 feet, to a point on the Monument Substation Southerly fence line, and to the POINT OF ENDING.

46kV Line 29T (Segment 2)
Commencing at the Northwest corner of said Section 21; thence South 00°30'48" West, 5046.02 feet, along the West line of said Section 21; thence South 00°11'59" East, 1147.55 feet, along the East line of said Section 29; thence South 89°57'28" West, 1259.09 feet, to a point on the East one-eighth line of said Section 29, and to the POINT OF BEGINNING; thence South 44°09'52" West, 266.12 feet, more or less, to a point on the North one-eighth line of said Section 29, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Section 26, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:
46 kV line 29T (segment 3)

Commencing at the North one-quarter corner of said Section 26; thence South 00°39'07" East, 374.03 feet, along the North and South one-quarter line of said Section 26, to the POINT OF BEGINNING; thence South 67°55'34" East, 105.45 feet; thence South 08°28'14" West, 613.43 feet, more or less, to a point on the North and South one-quarter line of said Section 26, and the POINT OF ENDING.

Croton Project
Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 7 and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the South one-quarter corner of said Section 7; thence North 00°51'24" East, 196.77 feet, along the North and South one-quarter line of said Section 07, to the POINT OF BEGINNING; thence North 89°32'23" East, 30.45 feet, to Reference Point "X"; thence continuing North 89°32'23" East, 6.35 feet; thence North 88°52'20" East, 1076.68 feet, to Reference point "A"; thence continuing North 88°52'20" East, 241.98 feet; thence South 32°30'42" East, 207.59 feet, to Reference point "B"; thence North 88°43'49" East, 131.24 feet; thence South 63°51'13" East, 172.77 feet; thence South 32°18'07" East, 393.19 feet; thence South 05°18'46" East, 166.08 feet, to Reference Point "D"; thence South 25°44'23" West, 47.18 feet; thence South 16°57'13" East, 47.47 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "X"; thence North 00°47'15" East, 1268.37 feet, to Reference Point "Y"; thence North 00°53'27" East, 1188.96 feet, more or less, to a point on the East and West one-quarter line of said Section 7, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Y"; thence South 87°46'05" West, 28.96 feet, to a point on the North and South one-quarter line of said Section 7, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence South 14°38'40" West, 150.42 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "B"; thence South 17°21'27" West, 319.07 feet; thence South 00°39'42" West, 48.18 feet, to Reference Point "E"; thence continuing South 00°39'42" West, 784.64 feet, to Reference point "C"; thence South 00°39'42" West, 390.33 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence South 59°09'27" West, 59.54 feet, more or less, to the Western line of Government Lot 1 of said Section 18, and the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas
The centerlines of existing underground electric facilities easement areas located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

UG Elec1
Commencing at previously stated Reference Point "D"; thence South 74°54'18" West, 41.70 feet, to a point on the Easterly Croton Substation fence, and the POINT OF BEGINNING; thence South 82°53'39" East, 17.31 feet; thence South 04°59'07" East, 14.62 feet; thence South 00°34'07" West, 129.28 feet; thence South 76°56'21" East, 34.71 feet; thence South 79°41'48" East, 24.07 feet; thence South 63°49'49" East, 20.46 feet; thence South 36°31'29" East, 15.10 feet; thence South 74°31'59" East, 5.58 feet; thence South 78°47'35" East, 235.51 feet, to Reference Point "F", and the POINT OF ENDING.

UG Elec2
Commencing at previously stated Reference Point "F"; thence South 73°18'54" East, 167.44 feet, to the POINT OF BEGINNING; thence North 87°09'19" East, 32.07 feet; thence South 78°33'35" East, 24.18 feet; thence South 80°46'01" East, 24.26 feet; thence South 76°07'37" East, 27.04 feet, to Reference Point "G", and the POINT OF ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 4, 8, 17, and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD2
Commencing at previously stated Reference Point "G"; thence North 61°51'45" West, 22.12 feet, to the POINT OF BEGINNING; thence South 61°51'45" East, 22.12 feet; thence South 71°55'08" East, 175.85 feet, to Reference Point "H"; thence South 06°56'20" West, 168.01 feet, to Reference Point "I", thence South 07°01'38" West, 435.07 feet; thence South 01°02'48" West, 932.92 feet, to Reference Point "J"; thence North 88°21'06" West, 187.10 feet, to Reference Point "M"; thence South 60°25'51" West, 49.87 feet, to a point on the Easterly fence of Conklin Park Substation and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 84°31'23" East, 137.55 feet, more or less, to the Westerly right of way of S. Croton Hardy Dr, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 56°08'57" West, 45.67 feet, to Reference Point "L"; thence South 82°46'30" West, 154.36 feet; thence North 80°17'07" West, 40.38 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "L"; thence South 35°07'57" West, 103.10 feet; thence South 25°40'29" West, 75.67 feet, more or less, to the East and West one-quarter line of said Section 18, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence North 88°11'59" West, 189.62 feet; thence South 01°56'13" West, 26.28 feet; thence North 88°10'55" West, 333.46 feet; thence South 88°27'45" West, 592.76 feet, more or less, to a point on the East one-eighth line of said Section 18, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 14°29'08" East, 109.62 feet; thence North 14°25'02" East, 101.58 feet; thence North 10°45'26" East, 148.65 feet; thence North 01°39'49" East, 413.36 feet; thence North 44°52'04" East, 194.53 feet, more or less, to a point on the Easterly line of Lot 1, Block 9 of the Original Plat of the Village of Croton, and the POINT OF ENDING.

LVD3
Commencing at the North one-quarter corner of said Section 07; thence South 88°23'49" East, 2616.90 feet, along the North line of said Section 07; thence South 89°28'21" East, 2679.45 feet, along the North line of said Section 08, to Reference Point "N"; thence South 00°36'09" West, 1570.82 feet, along the North and South one-quarter line of said Section 08; thence South 89°23'51" East, 1347.14 feet, to the East one-eighth line of said Section 8, and the POINT OF BEGINNING; thence North 69°52'05" East, 126.88 feet; thence North 53°45'00" East, 1514.56 feet, more or less, to the East line of said Section 8, and the POINT OF ENDING.

LVD4
Commencing at previously stated Reference Point "N"; thence South 89°28'21" East, 2679.45 feet, along the North line of said Section 8; thence North 00°44'25" East, 3152.55 feet, along the West line of said Section 4; thence South 89°15'35" East, 848.27 feet, to a point on the centerline of Croton Dam Pond, and the West line of parcel located in Liber 160, Page, 510, Newaygo County Records, and the POINT OF BEGINNING; thence South 85°44'27" East, 451.55 feet, more or less, to a point on the Easterly FERC Project Boundary, and the East line of parcel located in Liber 160, Page 510, Newaygo County Records, and the POINT OF ENDING.

Legal Description: Croton Substation Easement
A substation easement located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point "E"; thence South 89°21'12" East, 589.79 feet; thence South 00°38'48" West, 374.71 feet; thence North 89°21'12" West, 12.16 feet; thence South 00°38'48" West, 23.10 feet, to Reference Point "AA"; thence North 89°21'12" West, 606.81 feet; thence North 00°09'37" West, 397.86 feet; thence South 89°21'12" East, 34.79 feet, to the POINT OF BEGINNING.

Legal Description: Conklin Park Substation
A substation easement located in Section 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

Commencing at the East one-quarter corner of said Section 18; thence South 88°37'59" West, 131.24 feet, along the East and West one-quarter line of said Section 18; thence North 01°22'01" West, 45.53 feet, to a point on the centerline of East 68th Street, and the POINT OF BEGINNING; thence North 88°54'26" West, 300.00 feet, along said centerline; thence North 01°05'34" East, 261.37 feet; thence South 88°54'26" East, 300.00 feet; thence South 01°05'34"" West, 261.37 feet, to the POINT OF BEGINNING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 07, and 18, Town 12 North, Range 11 West, Croton Township, Newaygo County, Michigan, more particularly described as follows:

46kV Line 19D
Commencing at previously stated Reference Point "AA"; thence North 18°22'10" West, 23.90 feet, to a point on the Southerly Croton Substation fence; thence along said Southerly fenceline the following five (5) courses; thence North 89°18'38" West, 47.11 feet, to Reference Point "W"; thence continuing North 89°18'38" West, 27.29 feet, to Reference Point "Q"; thence continuing North 89°18'38" West, 23.43 feet, to Reference Point "R"; thence continuing North 89°18'38" West, 22.82 feet, to Reference Point "S"; thence continuing North 89°18'38" West, 90.10 feet, to Reference Point "T", and the POINT OF BEGINNING; thence South 04°13'15" West, 229.15 feet; thence South 18°40'42" West, 398.09 feet; thence North 75°52'14" West, 161.75 feet; thence South 05°02'11" West, 431.42 feet; thence South 04°23'51" West, 876.17 feet; thence South 23°23'06" West, 6.81 feet, more or less, to a point on the East one-eighth line of said section 18, and the POINT OF ENDING.

46kV Line 95A
BEGINNING at previously stated Reference Point "S"; thence South 08°19'11" West, 235.23 feet; thence South 17°38'57" West, 307.61 feet; thence South 05°54'27" West, 103.56 feet; thence South 04°33'06" West, 893.32 feet; thence South 37°01'37" West, 442.61 feet; thence South 26°22'28" West, 52.87 feet, more or less, to a point on the East one-eighth line of said section 18, and the POINT OF ENDING.

46kV Line 20A
BEGINNING at previously stated Reference Point "R"; thence South 08°20'40" West, 639.03 feet; thence South 04°30'09" West, 830.27 feet; thence South 33°55'15" East, 370.08 feet; thence South 87°56'15" East, 551.08 feet; thence South 88°38'17" East, 182.43 feet, more or less, to a point on the East line of said Section 18, and the POINT OF ENDING.

46kV Line 112A
BEGINNING at previously stated Reference Point "Q"; thence South 07°27'41" West, 639.86 feet; thence South 04°54'48" West, 797.55 feet; thence South 34°00'27" East, 356.26 feet; thence South 87°45'34" East, 332.37 feet; thence South 88°14'25" East, 379.02 feet, more or less, to a point on the East line of said Section 18, and the POINT OF ENDING.

46kV Line 19C
BEGINNING at previously stated Reference Point "W"; thence South 00°29'23" West, 54.23 feet; thence North 77°21'38" East, 65.96 feet; thence North 00°55'11" East, 365.47 feet; thence North 49°39'14" West, 299.13 feet; thence North 34°17'32" West, 1885.46 feet; thence North 28°21'34" West, 1333.86 feet, to a point on the North and South one-quarter line of said Section 7, and the POINT OF ENDING.

Five Channels Project
Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 22 and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the South one-quarter corner of said Section 23; thence South 87°54'00" West, 73.40 feet, along the South line of said Section 23 to the POINT OF BEGINNING and REFERENCE POINT "A"; thence North 60°59'16" East, 99.59 feet; thence North 33°36'50" West, 135.67 feet; thence North 36°54'18" East, 487.72 feet, to REFERENCE POINT "B"; thence South 44°58'00" East, 289.19 feet; thence North 48°12'01" East, 455.75 feet, to REFERENCE POINT "C"; thence North 51°06'30" West, 166.50 feet; thence North 15°41'29" East, 588.08 feet, more or less, to a point on the South one-eighth line of said Section 23, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 40°15'39" West, 171.72 feet, to the REFERENCE POINT "E"; thence North 39°55'53" West, 92.61 feet; thence North 60°19'52" West, 23.11 feet, to a point on the Easterly Five Channels Dam Substation fence, and the POINT OF ENDING.
And also, BEGINNING at previously stated REFERENCE POINT "E"; thence North 21°54'16" West, 117.70 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated REFERENCE POINT "C"; thence South 67°13'05" East, 227.66 feet; thence South 70°20'20" East, 342.62 feet, to REFERENCE POINT "D"; thence South 00°37'00" East, 245.44 feet; thence South 79°22'41" East, 4.67 feet, more or less, to a point on the East one-eighth line of said Section 23, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "D"; thence South 77°22'25" East, 4.28 feet, more or less, to a point on the East one-eighth line of said Section 23, and the POINT OF ENDING.

LVD1a
Commencing at previously stated REFERENCE POINT "A"; thence South 87°54'00" West, 641.22 feet, along the South line of said Section 23, to the POINT OF BEGINNING, and REFERENCE POINT "F"; thence North 74°30'06" West, 294.09 feet; thence North 76°26'22" West, 507.56 feet; thence South 17°41'35" West, 100.79 feet; thence North 73°07'16" West, 2155.47 feet; thence North 73°18'55" West, 1686.41 feet, to REFERENCE POINT "G"; thence North 00°44'36" West, 1044.33 feet; thence South 87°41'38" West, 73.22 feet, more or less, to a point the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE PONT "G"; thence South 78°52'15" West, 79.53 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "G"; thence South 00°52'31" East, 748.67 feet; thence North 63°08'48" West, 93.94 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

Legal Description: Centerlines for Existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 21 and 22, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD2
Commencing at the Southwest corner of said Section 22; thence North 00°32'23" West, 2631.40 feet, along the West line of said Section 22, to the West one-quarter corner of said Section 22; thence North 88°00'54" East, 28.49 feet, along the East and West one-quarter line of said Section 22, to the POINT OF BEGINNING and REFERENCE POINT "I"; thence North 04°38'58" East, 29.96 feet; thence North 66°13'50" West, 922.68 feet, to REFERENCE POINT "J"; thence North 41°24'07" West, 570.59 feet; thence North 10°44'13" West, 328.89 feet; thence North 16°04'07" West, 244.17 feet; thence North 72°28'30" West, 404.85 feet; thence South 87°43'04" West, 477.29 feet; thence South 71°02'36" West, 421.17 feet; thence South 50°53'53" West, 39.65 feet, more or less, to the Easterly property line, of non-Consumers Energy property, as recorded in Liber 1162, Page 679, Iosco County Records, and the POINT OF ENDING and REFERENCE POINT "K".

And also, BEGINNING at previously stated REFERENCE POINT "J"; thence South 26°25'47" West, 388.61 feet; thence South 57°51'22" East, 166.53 feet, more or less, to a point on the East and West one-quarter line of said Section 21, and the POINT OF ENDING.

LVD2a
Commencing at previously stated REFERENCE POINT "K"; thence South 50°53'53" West, 459.95 feet, to the POINT OF BEGINNING; thence South 50°53'53" West, 187.69 feet; thence South 76°02'36" West, 175.78 feet, to the Westerly FERC Project Boundary line, and the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 22 and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29U
Commencing at previously stated REFERENCE POINT "A"; thence South 87°54'00" West, 105.05 feet, along the South line of said Section 23, to the POINT OF BEGINNING; thence North 35°18'33" East, 202.36 feet; thence North 34°58'55" East, 510.44 feet; thence North 23°40'10" West, 112.00 feet, to REFERENCE POINT "L"; thence continuing North 23°40'10" West, 29.92 feet thence North 28°46'40"

West, 164.29 feet; thence South 43°24'35" West, 68.85 feet, to a point on the Five Channels Substation fence, and the POINT OF ENDING.

46 kV line 29T (segment 1)
Commencing at previously stated REFERENCE POINT "F"; thence South 87°54'00" West, 168.73 feet, along the South line of said section 23, to the POINT OF BEGINNING; thence North 69°34'58" West, 27.48 feet; thence North 76°30'21" West, 566.42 feet; thence North 73°10'35" West, 2205.37 feet; thence North 73°13'19" West, 1784.08 feet, more or less, to a point on the North and South one-quarter line of said Section 22, and the POINT OF ENDING.

Legal Description: Centerline for Existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 22, and 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29T (segment 2)
Commencing at previously stated REFERENCE POINT "I"; thence North 88°00'54" East, 71.80 feet, along the East and West one-quarter line of said Section 22, to the POINT OF BEGINNING; thence North 51°14'11" West, 113.74 feet; thence North 66°21'03" West, 882.00 feet; thence North 41°05'39" West, 401.09 feet; thence North 24°15'19" West, 464.11 feet; thence North 25°08'25" West, 243.79 feet; thence North 74°35'15" West, 372.03 feet; thence South 87°52'55" West, 461.51 feet; thence South 69°00'45" West, 464.52 feet; thence South 49°42'06" West, 457.60 feet; thence South 57°14'41 West, 390.10 feet; to a point on the Westerly FERC Project Boundary line, and the POINT OF ENDING.

Proposed 46 kV line
BEGINNING at previously stated REFERENCE POINT "L"; thence South 83°39'53" East, 30.00 feet, to a point on the West line of the Proposed Largo Substation Easement, and the POINT OF ENDING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet each side of the following described centerline located in the Southeast one-quarter of Section 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerline described as:

Commencing at the South one-quarter corner of said Section 23; thence North 00°41'18" West, 696.21 feet, along the North and South one-quarter line of said Section 23; thence North 89°18'42" East, 709.27 feet, to a point on the centerline of Old M-65, and POINT OF BEGINNING; thence Northwesterly, 107.50 feet, along the arc of a 450.00 foot radius curve to the left, the central angle of which is 13°41'13", and the long chord of which bears North 76°54'15" West, 107.24 feet; thence North 83°44'51" West, 346.20 feet; thence Westerly, 56.27 feet, along the arc of a 500.00 foot radius curve to the right, the central angle of which is 06°26'52", and the long chord of which bears North 80°31'25" West, 56.24 feet; thence North 77°17'59" West, 22.55 feet; thence Northwesterly, 96.06 feet, along the arc of a 150.00 foot radius curve to the right, the central angle of which is 36°41'28", and the long chord of which bears North 58°57'15" West, 94.42 feet; thence along a line non-tangent to said curve, South 42°22'40" West, a distance of 32.36 feet, to the POINT OF ENDING and REFERENCE POINT "H". The sidelines of said strip are to be extended or

shorted to meet at angle points and to begin at the centerline of Old M-65 and to terminate at the Five Channels Dam Substation easement.

Legal Description: Largo Substation Easement
Substation easement located in Section 23, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, being described as follows:

Commencing at the Southwest corner of said Section 23; thence North 87°54'00" East, 2621.56 feet, along the South line of said Section 23, to the South one-quarter corner of said Section 23; thence North 47°29'46" East, 541.36 feet, to a point on the Easterly right of way of Old M 65 Trail; and the POINT OF BEGINNING of said easement; thence North 44°45'49" West, 277.68 feet; thence North 06°20'07" East, 219.00 feet, to a point on the North edge of Five Channels Road; thence along the North edge of Five Channels Road the following three (3) courses: South 83°32'31" East, 373.25 feet; thence South 79°44'36" East, 73.84 feet; thence South 73°05'02" East, 80.63 feet, to a point on the Easterly right of way of Old M 65 Trail; thence along the Easterly right of way of Old M-65 Trail the following four (4) courses: South 41°00'01" West, 113.29 feet; thence South 44°35'54" West, 74.86 feet; thence South 47°22'04" West, 69.96 feet; thence South 48°43'38" West, 227.45 feet, to the POINT OF BEGINNING of said easement.

Foote Project
Legal Description: Centerlines for existing HVD Electric Facilities Easement Area
The centerlines of existing electric facilities easement areas located Sections 28, 29, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29J (segment 1)
Commencing at the West one-quarter corner of said Section 29; thence North 89°22'25" East, 2331.67 feet, along the East and West one-quarter line of said Section 29; thence South 01°12'46" East, 479.97 feet, along the West line of the East 300 feet of the North one-half of the Southwest one-quarter of said Section 29, to the POINT OF BEGINNING, and REFERENCE POINT "A"; thence South 76°37'35" East, 1305.71 feet; thence South 76°43'03" East, 891.69 feet; thence South 76°43'12" East, 446.71 feet; thence South 76°50'49" East, 445.39 feet; thence South 47°19'59" East, 452.72 feet; thence South 47°31'49" East, 1353.08 feet; thence South 38°55'24" East, 487.88 feet; thence South 60°25'09" East, 482.14 feet; thence South 68°59'03" East, 453.26 feet; thence South 69°00'10" East, 3141.41 feet; thence South 59°37'54" East, 3371.74 feet; thence South 59°53'24" East, 414.17 feet; thence North 87°43'27" East, 459.30 feet; thence North 54°45'24" East, 1910.60 feet; thence North 32°58'34" East, 306.11 feet, to REFERENCE POINT "C"; thence North 32°01'59" East, 313.58 feet; thence North 10°41'19" West, 285.66 feet, to a point on the Southerly Foote Dam Substation fence, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 59°22'17" East, 54.69 feet, to the POINT OF ENDING.

46 kV line 29J (segment 2)
Commencing at the East one-quarter corner of said Section 30; thence South 87°59'57" West, 2709.41 feet, along the East and West one-quarter line of said Section 30, to a point on the North and South one quarter

line of said Section 30; thence North 00°07'06" West, 81.25 feet, along the North and South one-quarter line to REFERENCE POINT "S"; thence continuing North 00°07'06" West, 46.63 feet, along the North and South one-quarter line, to the POINT OF BEGINNING, and REFERENCE POINT "T"; thence South 87°38'47" West, 857.65 feet; thence South 87°24'22" West, 427.03 feet; thence South 86°22'51" West, 176.82 feet; thence South 00°19'37" East, 113.16 feet, more or less, to a point on the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

46 kV line 29L (segment 1)
Commencing at previously stated REFERENCE POINT "A"; thence South 01°12'46" East, 49.79 feet, to the POINT OF BEGINNING; thence South 76°40'09" East, 3072.61 feet; thence South 47°41'01" East, 1778.53 feet; thence South 39°35'35" East, 543.60 feet; thence South 61°43'32" East, 531.95 feet; thence South 69°04'05" East, 3504.20 feet; thence South 59°41'21" East, 3452.82 feet, to REFERENCE POINT "D"; thence South 59°50'36" East, 343.48 feet; thence North 88°00'00" East, 489.51 feet; thence North 55°25'22" East, 1927.06 feet; thence North 31°18'38" East, 331.32 feet; thence North 31°41'17" East, 697.43 feet; thence North 44°50'46" East, 300.09 feet; thence North 40°55'35" East, 590.96 feet; thence North 24°06'50" East, 326.04 feet; thence North 40°10'12" East, 203.49 feet; thence North 40°18'11" East, 949.11 feet, more or less, to the North Line of said Section 35, and the POINT OF ENDING.

46 kV line 29L (segment 2)
BEGINNING at previously stated REFERENCE POINT "S"; thence South 87°35'28" West, 1167.14 feet; thence South 87°23'44" West, 107.58 feet; thence South 85°49'06" West, 155.55 feet; thence South 01°01'25" East, 65.85 feet, more or less, to a point on the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

46 kV line 29M
BEGINNING at previously stated REFERENCE POINT "D"; thence South 30°55'14" East, 424.12 feet, more or less, to the South one-eighth of said Section 34, and the POINT OF ENDING.

46 kV line 29T
Commencing at the East one-quarter corner of said Section 30; thence South 87°59'57" West, 4588.16 feet, along the East and West one-quarter line of said Section 30, to the POINT OF BEGINNING; thence North 02°42'35" West, 114.22 feet; thence North 89°46'57" West, 98.68 feet; thence North 30°28'01" West, 207.00 feet, more or less, to a point on a line 300 feet North of and parallel to the East and West one-quarter line of said Section 30, and the POINT of ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, 29, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1
BEGINNING at previously stated REFERENCE POINT "A"; thence South 76°37'35" East, 857.15 feet, to REFERENCE POINT "E"; thence continuing South 76°37'35" East, 448.56 feet, to REFERENCE POINT "F"; thence South 76°43'03" East, 891.69 feet, to REFERENCE POINT "G"; thence South 76°43'12" East,

446.71 feet; thence South 76°35'29" East, 445.16 feet, to REFERENCE POINT "H"; thence South 47°34'02" East, 451.95 feet, to REFERENCE POINT "I"; thence South 47°31'49" East, 1353.08 feet; thence South 38°55'24" East, 487.88 feet; thence South 60°25'09" East, 482.14 feet, to REFERENCE POINT "J"; thence South 68°59'03" East, 453.26 feet, to REFERENCE POINT "K"; thence South 69°00'10" East, 3141.41 feet, to REFERENCE POINT "L"; thence South 59°37'54" East, 3371.74 feet; thence South 59°27'50" East, 416.84 feet, to REFERENCE POINT "M"; thence South 63°46'20" East, 210.74 feet; thence South 88°08'59" East, 179.57 feet; thence South 66°17'20" East, 313.73 feet, more or less, to the South one-eighth line of said Section 34, and POINT OF ENDING, and REFERENCE POINT "N".

And also, BEGINNING at previously stated REFERENCE POINT "H"; thence North 47°14'38" West, 149.58 feet; thence North 25°33'06" East, 490.20 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "J"; thence South 00°02'51" West, 863.24 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "L"; thence North 41°20'46" East, 338.40 feet; thence North 43°12'24" East, 93.54 feet, to REFERENCE POINT "Q"; thence North 41°18'12" East, 299.67 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "Q"; thence North 60°07'38" West, 781.09 feet; thence North 26°22'32" West, 205.72 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "M"; thence North 37°16'27" West, 208.93 feet; thence North 53°13'55" West, 178.96 feet; thence North 49°41'57" West, 338.83 feet; thence North 45°21'14" West, 171.68 feet; thence North 48°14'01" West, 200.40 feet; thence North 46°35'55" West, 142.00 feet, to the POINT OF ENDING.

LVD2
Commencing at previously stated REFERENCE POINT "N"; thence North 89°31'09" East, 488.42 feet, along the South one-eighth line of said Section 34, to the POINT OF BEGINNING; thence North 29°36'48" West, 119.40 feet; thence North 20°11'58" East, 457.24 feet; thence North 51°39'12" East, 1031.23 feet; thence North 25°51'25" East, 305.41 feet; thence North 28°15'55" East, 234.69 feet; thence North 33°04'56" East, 299.44 feet; thence North 28°13'52" West, 155.37 feet; thence North 09°36'13" East, 232.50 feet, to REFERENCE POINT "O"; thence South 87°56'15" West, 103.97 feet, to a point on the Easterly Foote Dam Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "O"; thence North 83°02'56" East, 207.55 feet; thence North 64°46'21" East, 198.26 feet; thence North 39°00'12" East, 49.26 feet; thence North 40°35'45" East, 539.76 feet; thence North 19°12'28" East, 237.71 feet; thence North 40°31'30" East, 246.11 feet; thence North 40°07'38" East, 369.70 feet, to REFERENCE POINT "P"; thence North 40°41'23" East, 240.88 feet; thence North 40°17'47" East, 391.28 feet, to a point on the North Line of said Section 35, and the POINT OF ENDING.

LVD3

Commencing at the Northwest corner of said Section 35; thence North 89°07'26" East, 141.40 feet, along the North line of said Section 35, to the POINT OF BEGINNING; thence South 01°22'45" East, 17.12 feet; thence South 89°10'51" West, 1247.05 feet, to the POINT OF ENDING.

LVD4
BEGINNING at Previously stated REFERENCE POINT "T'"; thence South 87°38'47" West, 857.65 feet; thence South 87°24'22" West, 427.03 feet; thence South 86°22'51" West, 176.82 feet; thence South 87°53'22" West, 197.37 feet, to REFERENCE POINT "U"; thence South 88°22'26" West, 225.61 feet; thence North 89°46'57" West, 98.68 feet, to the POINT OF ENDING and REFERENCE POINT "V".

And also, BEGINNING at previously stated REFERENCE POINT "U"; thence South 03°44'36" East, 112.79 feet, more or less to the East and West one-quarter line of said Section 30, and the POINT OF ENDING.

Legal Description: Centerlines for existing U/G Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, 29, 30, 33, 34 and 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

U/G Elec.1
BEGINNING at previously stated REFERENCE POINT "E"; thence South 18°55'10" West, 19.25 feet; thence South 39°11'20" West, 19.46 feet; thence South 48°50'21" West, 24.29 feet; thence South 41°15'07" West, 24.60 feet; thence South 20°16'48" West, 24.92 feet thence South 08°15'48" West, 22.80 feet; thence South 08°59'59" East, 30.76 feet; thence South 16°01'28" East, 74.53 feet; thence South 10°43'04" East, 50.60 feet, to the POINT OF ENDING.

U/G Elec.2
BEGINNING at previously stated REFERENCE POINT "F"; thence South 86°11'41" East, 15.79 feet; thence North 82°10'27" East, 15.75 feet; thence North 70°50'20" East, 27.13 feet; thence North 51°21'51" East, 24.85 feet; thence North 32°16'32" East, 60.43 feet, to REFERENCE POINT "R"; thence North 29°45'49" East, 23.92 feet; thence North 18°37'39" East, 103.03 feet; thence North 28°17'23" East, 110.90 feet; thence North 60°47'59" East, 16.03 feet; thence South 81°28'37" East, 20.89 feet; thence South 71°48'27" East, 17.14 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "R"; thence South 77°27'30" West, 5.16 feet; thence North 64°47'16" West, 65.00 feet; thence North 76°12'56" West, 99.30 feet; thence North 76°52'05" West, 70.01 feet; thence North 79°41'18" West, 74.61 feet; thence North 66°52'15" West, 33.80 feet; thence North 59°37'43" West, 33.24 feet; thence North 07°23'27" East, 42.98 feet; thence North 06°08'21" West, 28.50 feet, to the POINT OF ENDING.

U/G Elec.3
BEGINNING at previously stated REFERENCE POINT "G"; thence North 54°24'56" East, 12.83 feet; thence North 30°25'08" East, 50.43 feet; thence North 37°11'41" East, 43.40 feet; thence North 52°14'11" East, 36.29 feet; thence North 39°11'03" East, 40.91 feet; thence North 09°55'50" East, 94.45 feet; thence

North 24°22'48" East, 77.58 feet; thence North 19°06'20" East, 90.52 feet; thence North 24°21'06" East, 29.72 feet; thence North 63°48'47" East, 12.57 feet; thence South 86°01'32" East, 27.98 feet; thence South 23°43'33" East, 2.15 feet, to the POINT OF ENDING.

U/G Elec.4
BEGINNING at previously stated REFERENCE POINT "I"; thence South 64°06'31" East, 38.99 feet; thence South 68°58'49" East, 22.77 feet; thence South 76°26'35" East, 26.44 feet; thence North 77°05'59" East, 49.30 feet; thence North 72°44'04" East, 23.34 feet; thence North 68°38'12" East, 82.28 feet; thence North 64°19'09" East, 76.04 feet, to the POINT OF ENDING.

U/G Elec.5
BEGINNING at previously stated REFERENCE POINT "K"; thence South 81°56'47" East, 29.28 feet; thence North 89°21'53" East, 38.94 feet; thence North 76°23'55" East, 40.26 feet; thence Northeasterly, 79.72 feet, along the arc of a 68.00 foot radius curve to the left, the central angle of which is 67°10'03", and the long chord of which bears North 28°27'03" East, 75.23 feet, to the POINT OF ENDING.

U/G Elec.6
BEGINNING at previously stated REFERENCE POINT "P"; thence North 78°15'09" East, 5.32 feet; thence South 71°16'46" East, 20.51 feet; thence South 39°01'53" East, 15.51 feet; thence South 14°07'56" East, 115.40 feet; thence South 09°45'28" East, 43.97 feet; thence South 02°09'47" East, 101.00 feet; thence South 06°53'30" East, 43.25 feet; thence South 14°04'40" East, 88.10 feet; thence South 19°25'12" East, 88.00 feet; thence South 20°44'08" East, 88.57 feet; thence South 25°05'43" East, 32.79 feet; thence South 30°52'57" East, 39.34 feet; thence South 21°32'37" East, 18.42 feet, to the POINT OF ENDING.

U/G Elec.7
Beginning at previously stated REFERENCE POINT "V"; thence South 06°03'37" East, 4.60 feet; thence South 52°07'25" West, 8.99 feet; thence South 69°46'33" West, 11.72 feet; thence South 53°48'37" West, 12.98 feet; thence South 60°16'16" West, 24.78 feet; thence South 72°33'37" West, 27.49 feet; thence South 79°24'40" West, 30.36 feet; thence South 82°14'27" West, 31.66 feet; thence South 84°12'46" West, 90.93 feet; thence North 76°46'04" West, 15.48 feet; thence North 71°17'07" West, 14.95 feet; thence North 58°53'58" West, 18.75 feet; thence North 44°57'32" West, 29.10 feet; thence North 41°31'45" West, 252.11 feet, more or less, to a point on a line 300 feet North of and parallel to the East and West one-quarter line of said Section 30, and the POINT of ENDING.

Legal Description: Rea Road Substation Easement
Substation easement located in the Northwest one-quarter of Section 35, Town 24 North, Range 08 East, Oscoda Township, Iosco County, Michigan, being described as follows:

Commencing at the Northwest corner of said Section 35; thence South 01°06'32" East, 2113.65 feet, along the West line of said Section 35; thence North 88°53'28" East, 286.17 feet, to the POINT OF BEGINNING; thence North 28°20'22" East, 214.00 feet; thence South 57°10'43" East, 242.00 feet to a point on the centerline of Rea Road; thence Southwesterly along the centerline of Rea Road, 218.68 feet, along the arc of a 832.00 foot radius curve to the left, the central angle of which is 15°03'33", and the long chord of which

bears South 41°04'23" West, 218.05 feet; thence North 56°27'23" West, 194.00 feet to the POINT OF BEGINNING.

Hardy Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 13, 14, 15, 21, 22, 23, 27, 28, 29, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the Southeast corner of said Section 28; thence North 89°14'36" West, 1012.05 feet, along the South line of said Section 28; thence North 00°45'24" East, 45.52 feet, more or less, to a point on the centerline of South Croton Hardy Drive, and to the POINT OF BEGINNING; thence North 88°55'21" West, 89.34 feet, to Reference Point "F"; thence continuing North 88°55'21" West, 815.41 feet, to Reference Point "A"; thence North 43°46'28" West, 505.39 feet; thence North 46°38'28" West, 496.60 feet, more or less, to the North-South one-quarter line of said Section 28, to Reference Point "B", and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "A"; thence North 88°55'21" West, 715.20 feet, more or less, to a point on the North and South one-quarter line of said Section 28, and to the POINT OF ENDING.

LVD1a

Commencing at previously stated Reference Point "B"; thence North 48°43'38" West, 146.85 feet, to the POINT OF BEGINNING; thence continuing North 48°43'38" West, 772.80 feet; thence North 51°31'14" West, 308.82 feet; thence North 50°51'00" West, 114.63 feet, to Reference Point "C"; thence North 72°46'59" West, 92.78 feet; thence North 52°57'37" West, 621.02 feet; thence North 03°31'50" West, 246.80 feet; thence North 66°41'55" West, 96.02 feet, to Reference Point "D"; thence continuing North 66°41'55" West, 305.43 feet; thence North 78°05'28" West, 667.18 feet; thence North 02°59'04" East, 113.27 feet, to Reference Point "I"; thence North 00°08'25" East, 332.44 feet; thence North 00°00'58" West, 1002.45 feet, to Reference Point "P"; thence South 88°37'11" East, 1090.58 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 85°01'26" East, 369.89 feet; thence North 83°11'12" East, 711.99 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 89°25'47" West, 33.98 feet, more or less, to a point on the West line of said Section 28, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "P"; thence North 00°15'00" East, 18.18 feet, more or less, to a point on the North one-eighth line of said Section 28, and to the POINT OF ENDING.

LVD2

Commencing at the Southwest corner of said Section 27; thence South 89°32'48" East, 1181.07 feet, along the South line of said Section 27; thence North 00°27'12" East, 1330.27 feet, to a point on the South one-

eighth line of said Section 27; thence North 42°02'14" East, 47.15 feet, to the POINT OF BEGINNING; thence North 49°03'47" West, 1173.91 feet; to the POINT OF ENDING.

LVD3
Commencing at the center one-quarter corner of said Section 27; thence North 89°13'16" West, 28.38 feet, along the East and West one-quarter line of said Section 27, to the POINT OF BEGINNING; thence North 02°18'47" East, 349.05 feet; thence North 00°52'02" East, 834.38 feet, to the POINT OF ENDING.

LVD4
Commencing at the Southeast corner of said Section 22; thence North 88°45'02" West, 42.81 feet, along the South line of said Section 22, to the POINT OF BEGINNING; thence North 01°43'14" West, 879.00 feet; thence North 16°10'38" West, 1009.12 feet; thence North 33°32'27" West, 991.22 feet, to Reference Point "G"; thence North 86°44'03" West, 333.66 feet; thence South 35°56'08" West, 318.03 feet; thence South 78°38'18" West, 309.35 feet; thence South 58°57'38" West, 239.37 feet, to Reference Point "H", and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "G"; thence South 87°22'01" East, 714.97 feet; thence North 86°28'12" East, 214.54 feet, more or less, to a point on the East line of said Section 22, and to the POINT OF ENDING.

LVD5
Commencing at the West one-quarter corner of said Section 23; thence North 00°33'59" East, 391.09 feet, along the East line of said Section 22; thence South 89°26'01" East, 1324.71 feet, to the POINT OF BEGINNING; thence North 01°29'13" East, 249.17 feet; to the POINT OF ENDING.

LVD6
Commencing at the Southwest corner of said Section 21, thence South 89°29'14" East, 2691.80 feet along the South line of said Section 21, thence North 00°37'49" East, 1391.35 feet, along the North-South one quarter line of said Section 21, to the POINT OF BEGINNING; thence South 89°05'11" East, 163.60 feet; thence South 81°58'21" East, 283.15 feet; thence South 26°55'23" East, 343.98 feet, to Reference Point "K", and the POINT OF ENDING.

LVD7
Commencing at the East one-quarter corner of said Section 22; thence North 00°33'59" East, 994.02 feet, along the East line of said Section 22; thence North 59°16'08" West, 667.11 feet, to a point on the North one-eighth line of said Section 22, and to the POINT OF BEGINNING; thence continuing North 59°16'08" West, 1033.36 feet, to Reference Point "L"; thence North 59°28'12" West, 353.53 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "L"; thence North 11°56'12" East, 353.66 feet, to the POINT OF ENDING.

LVD8

Commencing at the East one-quarter corner of said Section 14; thence North 89°00'00" West, 29.23 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence South 00°41'11" West, 1,324.51 feet, to a point on the South one-eighth line of said Section 14; thence continuing South 00°41'11" West, 1,121.49 feet; thence North 74°06'02" East, 373.33 feet; thence North 67°17'31" East, 354.53 feet; thence North 08°33'44" East, 303.53 feet; to the POINT OF ENDING.

LVD9
Commencing at the East one-quarter corner of said Section 14; thence North 89°00'00" West, 29.23 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence North 00°45'31" East, 1,444.22 feet; thence North 00°26'33" West, 284.68 feet; thence North 89°52'11" East, 97.83 feet, to the POINT OF ENDING.

LVD10
Commencing at the North one-quarter corner of said Section 14; thence South 00°29'00" West, 1342.45 feet, along the North and South one-quarter line of said Section 14; thence North 89°20'55" West, 2666.53 feet, along the North one-eighth line of said Section 14, to a point on the East line of said Section 15; thence North 00°33'49" East, 7.75 feet, along the East line of said Section 15, to the POINT OF BEGINNING; thence South 86°15'29" West, 1026.75 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 15, 22, 31, 32, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

LVD11
Commencing at the East one-quarter corner of said Section 32; thence North 89°05'19" West, 21.73 feet, along the East and West one-quarter line of said Section 32, to the POINT OF BEGINNING; thence North 46°18'05" West, 231.69 feet; thence North 88°38'30" West, 281.15 feet; thence North 89°39'33" West, 1714.72 feet, to Reference Point "N"; thence North 89°39'23" West, 2747.11 feet; thence South 76°10'32" West, 284.31 feet; thence North 89°00'37" West, 727.25 feet; thence South 86°37'53" West, 377.74 feet; thence North 88°44'39" West, 351.75 feet, to Reference Point "O"; thence South 13°19'18" West, 690.47 feet; thence South 52°51'38" West, 521.89 feet; thence North 55°25'47" West, 227.87 feet; thence North 04°19'41" West, 460.39 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "N"; thence South 21°53'47" West, 154.02 feet, to a point on the East and West one-quarter line of said Section 32, and to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "O"; thence South 86°10'14" West, 264.49 feet, to the POINT OF ENDING.

LVD12
Commencing at the West one-quarter corner of said Section 22; thence North 00°41'29" East, 507.63 feet, along the West line of said Section 22; thence North 49°36'03" East, 759.41 feet, to a point on the Southeasterly property line of a Consumers Energy parcel described in Liber 143, Page 92, and to the

POINT OF BEGINNING; thence North 49°38'48" East, 403.97 feet; thence North 34°57'01" East, 141.45 feet, to Reference Point "U", thence North 34°57'01" East, 47.31 feet, more or less, to a point on a line being descried as the East line of the Northwest one-quarter of the Northwest one-quarter except the East 10 acres thereof of said Section 22, and to the POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "U", thence South 78°12'00" East, 27.14 feet, more or less, to a point on a line being descried as the East line of the Northwest one-quarter of the Northwest one-quarter except the East 10 acres thereof of said Section 22, and to the POINT OF ENDING.

LVD13
Commencing at the East one-quarter corner of said Section15; thence North 00°08'36" East, 18.78 feet, along the East line of said Section 15, and the Easterly FERC Project Boundary, to the POINT OF BEGINNING; thence North 88°51'51" West, 1112.33 feet, to REFERENCE POINT "X"; thence North 89°09'27" West, 388.71 feet; thence South 80°50'06" West, 199.26 feet, to the East and West one-quarter line of said Section 15, the POINT OF ENDING.

And also, BEGINNING at Reference Point "X"; thence South 00°27'22" West, 31.13 feet, to the East and West one-quarter line of said Section15, and the POINT OF ENDING.
Legal Description: Centerlines for existing underground Electric Facilities Areas
The centerlines of existing underground electric facilities easement areas located in Sections 13, 21, 22, 28, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, said centerlines being described as follows:

UG Elec1
BEGINNING at previously stated Reference Point "F"; thence North 22°56'28" West, 15.75 feet; thence North 73°06'00" East, 113.63 feet; thence North 62°51'11" East, 81.97 feet; thence North 31°22'03" East, 57.23 feet; thence North 02°56'17" East, 51.81 feet; thence North 43°30'03" East 28.62 feet; thence North 31°26'53" East, 37.97 feet, to the POINT OF ENDING.

UG Elec2
BEGINNING at previously stated Reference Point "D"; thence North 37°38'45" East, 265.09 feet; thence North 35°40'36" East, 542.04 feet, to the POINT OF ENDING.

UG Elec 3
Commencing at the Northwest corner of said Section 28; thence South 89°29'14" East, 2691.80 feet, along the North line of said Section 28, to a point on the North and South one-quarter line of said Section 28; thence South 00°22'48" West, 158.87 feet, along the North and South one-quarter line of said Section 28; thence South 89°37'12" East, 245.40 feet, to the POINT OF BEGINNING; thence North 26°30'35" East, 43.60 feet; thence North 35°38'16" East, 216.23 feet; thence North 39°44'45" East, 229.73 feet; thence North 23°15'26" East, 147.72 feet, to Reference Point "J"; thence North 30°07'58" East, 141.95 feet; thence North 20°04'16" East, 83.73 feet; thence North 01°34'17" East, 58.43 feet; thence North 25°59'21" West, 83.11 feet; thence North 34°05'49" West, 113.94 feet; thence North 16°57'28" West, 49.88 feet; thence North 02°48'39" East, 74.50 feet; thence North 06°32'18" East, 55.37 feet; thence North 18°27'35" East, 73.58 feet, to Reference Point "K", and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 65°16'57" West, 102.57 feet, to the POINT OF ENDING.

UG Elec4
BEGINNING at previously stated Reference Point "H"; thence North 17°30'09" East, 17.02 feet; thence North 75°48'09" East, 17.14 feet; thence North 00°28'08" East, 63.35 feet; thence North 14°27'52" West, 42.16 feet; thence North 09°19'09" West, 43.99 feet; thence North 03°11'29" East, 46.05 feet; thence North 56°12'37" East, 9.95 feet, to the POINT OF ENDING.

UG Elec 5
Commencing at the West one quarter corner of said Section 13; thence North 00°07'53" East, 6.57 feet, along the West line of Section 13, to the POINT OF BEGINNING; thence South 85°30'36" East, 126.13 feet; thence South 86°45'39" East, 133.19 feet; thence South 88°41'27" East, 124.13 feet; thence South 89°35'04" East, 200.95 feet; thence South 88°58'24" East, 81.80 feet; thence South 84°52'56" East, 61.14 feet; thence South 80°43'35" East, 186.09 feet; thence South 80°03'20" East, 77.25 feet; thence South 84°21'13" East, 125.49 feet; thence South 87°53'49" East, 74.01 feet; thence North 86°34'20" East, 101.77 feet; thence North 89°40'11" East, 92.20 feet; thence South 78°51'25" East, 22.02 feet; thence South 52°53'32" East, 35.30 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 13, 23, 24, 27, 28, 29, Town 13 North, Range 11 West, Big Prairie Township, Newaygo County, Michigan, and in Section 18, Town 13 North, Range 10 West, Aetna Township, Mecosta County, Michigan, said centerlines being described as follows:

46kV Line 19C (Segment 1)
Commencing at the Southeast corner of said Section 28; thence North 89°14'36" West, 910.40 feet, along the South line of said Section 28; thence North 00°45'24" East, 95.91 feet, to a point on the centerline of South Croton Hardy Drive, and to the POINT OF BEGINNING; thence North 88°47'40" West, 996.06 feet; thence North 44°09'23" West, 851.82 feet; thence North 44°06'11" West, 1223.09 feet; thence South 83°55'04" West, 1429.25 feet; thence South 79°19'39" West, 603.41 feet; thence South 75°08'43" West, 1290.70 feet, more or less, to a point on the East one-eighth line of said Section 29, and to the POINT OF ENDING.

46kV Line 19C (Segment 2)
Commencing at the Southwest corner of said Section 27; thence South 89°32'48" East, 1,181.07 feet, along the South line of said Section 27; thence North 00°27'12" East, 1330.27 feet, to a point on the South one-eighth line of said Section 27, and to the POINT OF BEGINNING; thence North 42°02'14" East, 237.56 feet, more or less, to a point on the West one-eighth line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 3)
Commencing at the Center one-quarter corner of said Section 27; thence North 89°13'16" West, 326.68 feet, along the East and West one-quarter line of said Section 27, to the POINT OF BEGINNING; thence

North 42°10'52" East, 497.13 feet, more or less, to a point on the North and South one-quarter line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 4)
Commencing at the Center one-quarter corner of said Section 27; thence South 89°14'05" East, 1188.67 feet, along the East and West one-quarter line of said Section 27; thence North 00°45'55" East, 1,318.33 feet, to a point on the North one-eighth line of said Section 27, and to the POINT OF BEGINNING; thence North 66°44'20" East, 167.73 feet, more or less, to a point on the East one-eighth line of said Section 27, and to the POINT OF ENDING.

46kV Line 19C (Segment 5)
Commencing at the South one-quarter corner of said Section 23; thence North 88°56'27" West, 1238.21 feet, along the South line of said Section 23, to the POINT OF BEGINNING; thence North 64°48'28" East, 3240.33 feet; thence North 72°47'12" East, 6512.10 feet; thence North 02°06'07" East, 1023.18 feet; thence North 01°54'23" East, 772.49 feet; thence North 00°13'40" East, 1245.62 feet; thence North 33°50'14" East, 704.15 feet; thence North 17°37'49" East, 1942.90 feet; thence North 17°41'39" East, 246.37 feet, more or less, to a point on the North one-eighth line of said Section 18, and to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 28, and 32, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

46kV Line 19C (Segment 6)
Commencing at the East one-quarter corner of said Section 32; thence North 89°05'19" West, 323.71 feet, along the East and West one-quarter line of said Section 32, to the POINT OF BEGINNING; thence North 40°54'45" East, 492.12 feet, to a point on the East line of said Section 32, and to the POINT OF ENDING.

46kV Line 19C (Segment 7)
Commencing at the South one-quarter corner of said Section 28; thence North 89°41'32" West, 698.86 feet, along the South line of said Section 28, to the POINT OF BEGINNING; thence North 41°03'10" East, 1089.73 feet, to a point on the North and South one-quarter line of said Section 28, and to the POINT OF ENDING.

Hodenpyl Project
Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Sections 24 and 25, Town 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, and in Sections 1, 2, 10, 11, 16, 17, 19, 20, 21and 30, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, and in Sections 35 and 36, Town 24 North, Range 12 West, Wexford Township, Wexford County, Michigan, said centerlines being described as follows:

LVD1

BEGINNING at the East one-quarter corner of said Section 25; thence North 10°47'33" West, 236.94 feet, to Reference Point "M"; thence North 10°20'54" West, 589.89 feet; thence North 21°13'36" West, 235.90 feet, to Reference Point "A"; thence North 04°00'55" East, 112.18 feet; thence North 34°47'27" East, 594.18 feet, to Reference Point "B"; thence North 34°47'27" East, 155.90 feet; thence South 23°33'00" East, 123.17 feet; thence South 19°48'32" East, 105.76 feet; thence South 02°36'17" East, 165.43 feet; thence South 05°41'17" East, 17.16 feet; thence South 14°40'08" East, 18.18 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence South 89°08'10" East, 37.95 feet, more or less, to a point on the Easterly right of way line of Hodenpyl Dam Road, and to the POINT OF ENDING.

LVD1A
And also BEGINNING at previously stated Reference Point "A"; thence South 30°30'00" West, 82.13 feet; thence South 61°15'13" West, 174.95 feet, to the POINT OF ENDING.

LVD2
BEGINNING at previously stated Reference Point "B"; thence North 25°15'20" West, 2762.04 feet; thence North 12°16'52" East, 490.81 feet; thence North 51°30'13" East, 357.80 feet, to Reference Point "Z"; thence North 52°57'21" East, 209.59 feet; thence North 63°11'53" East, 229.74 feet, to Reference Point "C"; thence North 52°19'31" East, 283.15 feet, more or less, to a point on the East and West one-quarter line of said Section 24, and the POINT OF ENDING.

And also commencing at previously stated Reference Point "Z"; thence North 51°49'21" West, 277.81 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 03°15'52" East, 182.30 feet, more or less, to a point on the East and West one-quarter line of said Section 24, and the POINT OF ENDING.

LVD3
Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section 17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 549.69 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 69°30'14" West, 272.38 feet, to Reference Point "N"; thence continuing South 69°30'14" West, 1487.56 feet; thence South 48°42'26" West, 313.74 feet; thence South 48°34'48" West, 297.02 feet; thence South 52°22'53" West, 129.33 feet, more or less, to a point on the East line of said Section 24, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "N"; thence North 14°57'45" West, 105.78 feet, more or less, to a point on the North one-eighth line of said Section 19, and to the POINT OF ENDING.

LVD4

Commencing at the West one quarter corner of said Section 17; thence South 89°06'47" East, 2625.45 feet, along the East and West one-quarter line of said Section 17; thence South 01°10'31" West, 2656.11 feet, along the North and South one-quarter line of said Section 17; thence North 89°06'34" West, 3.05 feet, along the North line of said Section 20, to the POINT OF BEGINNING; thence South 01°48'32" East, 588.96 feet, to the POINT OF ENDING.

LVD5
Commencing at the West one-quarter corner of said Section 17; thence South 89°06'47" East, 2625.45 feet, along the East and West one-quarter line of said Section 17; thence South 01°10'31" West, 1624.48 feet, along the North and South one-quarter line of said Section 17, to the POINT OF BEGINNING; thence North 69°24'27" East, 809.47 feet, more or less, to a point on the South one-eighth line of said Section 17, and to the POINT OF ENDING.

LVD6
Commencing at the East one-quarter corner of said Section 17; thence South 02°30'10" West, 1328.65 feet, along the East line of said Section 17; thence North 89°06'41" West, 148.74 feet, along the South one-eighth line of said Section 17, to the POINT OF BEGINNING; thence South 11°25'49" East, 90.14 feet, to Reference Point "Q'"; thence continuing South 11°25'49" East, 434.78 feet; thence South 10°56'59" West, 301.55 feet, to Reference Point "O", thence continuing South 10°56'59" West, 290.07 feet; to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Q"; thence South 71°07'57" West, 758.03 feet; thence South 44°10'56" West, 652.40 feet; thence South 68°35'50" West, 374.46 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "O"; thence South 77°42'52" West, 185.24 feet; to the POINT OF BEGINNING; thence North 77°42'52" East, 185.24 feet; thence North 75°31'48" East, 793.63 feet, to Reference Point "P"; thence continuing North 75°31'48" East, 393.69 feet; thence North 49°22'52" East, 456.76 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "P"; thence South 23°52'36" West, 398.51 feet, to the POINT OF ENDING.

LVD7
Commencing at the East one-quarter corner of said Section 17; thence South 02°30'10" West, 595.52 feet, along the East Line of said Section 17, to the POINT OF BEGINNING; thence North 69°29'39" East, 2383.47 feet; thence North 48°09'57" East, 4602.89 feet, to Reference Point "R"; thence continuing North 48°09'57" East, 886.78 feet, more or less, to a point on the South one-eighth line of said Section 10, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "R", thence North 51°52'30" West, 262.90 feet; thence North 16°06'32" West, 455.64 feet, more or less to a point on the South one-eighth line of said Section 9, and to the POINT OF ENDING.

LVD8
Commencing at the Southeast corner of said Section 16; thence South 89°19'22" West, 500.77 feet; along the South line of said Section 16; thence South 00°40'38" East, 20.17 feet, to the POINT OF BEGINNING; thence South 89°52'06" West, 732.04 feet; thence North 34°50'29" West, 215.03 feet; thence North 25°35'50" West, 295.64 feet; thence North 63°30'24" East, 337.09 feet; thence North 13°35'54" West, 118.36 feet, to the POINT OF ENDING.

LVD9
Commencing at previously stated Reference Point "R"; thence North 48°09'57" East, 1419.84 feet, more or less, to a point on the West one-eighth line of said Section 10, and to the POINT OF BEGINNING; thence North 48°16'19" East, 416.13 feet, to Reference Point "T"; thence continuing North 48°16'19" East, 1016.60 feet, more or less, to a point on the East and West one-quarter line of said Section 10, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "T" thence North 46°40'56" West, 63.95 feet, more or less, to a point on the South Easterly right of way line of North Hodenpyl Dam Road, and the POINT OF ENDING.

LVD10
Commencing at the Northeast corner of said Section 10; thence North 89°51'46" West, 1359.13 feet, along the North line of said Section 10; thence South 02°22'02" West, 1442.28 feet, along the East one-eighth line of said Section 10, to the POINT OF BEGINNING; thence North 89°29'30" West, 392.65 feet; thence South 48°12'39" West, 1325.65 feet; to Reference Point "AB"; thence South 00°56'10" East, 380.00 feet, to POINT OF ENDING.

And also, BEGINNING at previously stated Reference Point "AB"; thence South 48°12'39" West, 9.27 feet, more or less, to a point on the North and South one-quarter line of said Section 10, and to the POINT OF ENDING.

LVD11
Commencing at the Northwest corner of said Section 11; thence South 02°33'38" West, 1447.61 feet, along the West line of said Section 11, to the POINT OF BEGINNING; thence South 89°38'24" East, 149.58 feet, to Reference PT "U"; thence continuing South 89°38'24" East, 355.81 feet, to Reference PT "FF"; thence continuing South 89°38'24" East, 1452.75 feet; thence South 84°24'15" East, 649.70 feet, more or less, to a point on the North and South one-quarter line of said Section 11, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "U"; thence North 19°31'14" West, 71.83 feet, more or less, to a point on the Southerly right of way line of M-115, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "FF"; thence North 00°52'28" West, 67.58 feet, more or less, to a point on the Southerly right of way line of M-115, and to the POINT OF ENDING.

LVD12

Commencing at the West one-quarter corner of said Section 2; thence North 89°06'45" East, 3931.38 feet, along the East and West one-quarter line of said Section 2, thence North 02°50'27" East, 2605.94 feet, along the East one-eighth line of said Section 2; thence South 89°46'01" East, 542.14 feet, along the North line of said Section 2, to the POINT OF BEGINNING; thence South 08°25'36" West, 69.89 feet, to Reference PT "V"; thence continuing South 08°25'36" West, 139.52 feet, to a point on a line being described as being 14 rods South of the North line of said Section 2, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference PT "V"; thence South 87°53'04" East, 138.83 feet, to the POINT OF ENDING.

LVD13
Commencing at the West one-quarter corner of said Section 2; thence North 89°06'45" East, 5240.81 feet, along the East and West one-quarter line of said Section 2; thence North 03°02'46" East, 2580.74 feet, along the East line of said Section 2; thence South 89°13'16" East, 1314.85 feet, along the North line of said Section 1; thence North 02°22'05" East, 83.38 feet, along the West one-eighth line of said Section 36, to the POINT OF BEGINNING to Reference Point "D"; thence South 84°02'15" East, 1316.61 feet, more or less, to a point on the North and South one-quarter line of said Section 1, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence North 84°02'15" West, 302.19 feet; thence North 02°21'17" East, 1198.24 feet; thence South 89°11'02" East, 655.97 feet; thence South 88°58'26" East, 698.97 feet; thence North 15°22'59" East, 0.50 feet; to a point on the South one-eighth line of said Section 36, and the POINT OF ENDING.

LVD14
Commencing at the East one-quarter corner of said Section 11; thence North 89°03'47" West, 1901.27 feet, along the East-West one-quarter line of said Section 11; thence North 00°'56'13" East, 20.15 feet, to the POINT OF BEGINNING; thence South 83°56'29" West, 116.72 feet, to the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas
The centerlines of an existing electric facilities easement areas located in Sections 24 and 25, Town 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, and in Sections 10, 11, 19 and 30, Town 23 North, Range 12 West, Springville Township, Wexford County, Michigan, said centerlines being described as follows:

46kV Line 120E (Segment 1)
Commencing at the Northwest corner of said Section 11; thence South 02°33'38" West, 977.62 feet, along the West line of said Section 11; thence South 89°40'53" East, 494.47 feet, to a point on a line lying 30 rods East of the West line of said Section11, and the POINT OF BEGINNING; thence continuing South 89°40'53" East, 2109.42 feet, more or less, to a point on the North and South one-quarter line of said Section 11, and to the POINT OF ENDING.

46kV Line 120E (Segment 2)
Commencing at the Northeast corner of said Section 10; thence North 89°51'46" West, 1,359.13 feet, along the North line of said Section 10; thence South 02°22'02" West, 970.60 feet, along the East one-eighth line

of said Section 10, to the POINT OF BEGINNING; thence North 89°34'28" West, 1355.60 feet, more or less, to a point on the North and South one-quarter line of said Section 10, and to the POINT OF ENDING.

46kV Line 13J
BEGINNING at the East one-quarter corner of said Section 25; thence North 10°47'33" West, 236.94 feet; thence North 10°20'54" West, 589.89 feet; thence North 10°38'19" West, 212.99 feet; thence North 35°12'22" East, 587.89 feet, to a point on the Westerly fence line of Hodenpyl Substation, and the POINT OF ENDING.

And also, BEGINNING at the East one-quarter corner of said Section 25; thence South 39°27'53" East, 1695.78 feet, to a point on the South one-eighth line of said Section 30, and the POINT OF ENDING.

46kV Line 18C
Commencing at the East one-quarter corner of said Section 25; thence North 87°34'10" West, 662.47 feet, along the East and West one-quarter line of said Section 25; thence North 02°25'50" East, 740.69 feet, to the FERC boundary line, and the POINT OF BEGINNING; thence North 61°09'52" East, 227.90 feet; thence North 39°22'04" East, 334.59 feet; thence North 39°07'42" East, 554.30 feet, to Reference Point "X", thence continuing North 39°07'42" East, 96.03 feet; thence North 82°37'39" East, 57.80 feet, to the POINT OF ENDING.

46kV Line 120A
Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 2580.80 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 08°45'29" East, 911.97 feet; thence South 52°07'53" West, 272.77 feet; thence South 52°22'53" West, 129.33 feet, more or less, to a point on the West line of said Section 19, and to Reference Point "AA", and the POINT OF ENDING.

46kV Line 120A (Segment 2)
And also Commencing at previously stated Reference Point "AA" ; thence South 52°22'53" West, 232.40 feet, to a point on the East and West one-quarter line of said section 24, and to the POINT OF BEGINNING; thence South 52°19'31" West, 283.15 feet; thence South 53°00'19" West, 351.89 feet; thence South 14°42'30" East, 3311.84 feet; thence South 00°42'12" East, 67.24 feet, to a point on the Hodenpyl Dam Substation fence, and to the POINT OF ENDING.

46kV Line 18A
Commencing at the West one-quarter corner of said Section 17; thence South 00°26'35" West, 2656.00 feet, along the West line of said Section17; thence South 00°56'10" West, 1250.07 feet, along the East line of said Section 19; thence North 88°48'31" West, 2602.98 feet, along the North one-eighth line of said Section 19; thence North 88°37'04" West, 2,633.00 feet, along the North one-eighth line of said Section 19, to the POINT OF BEGINNING; thence South 09°10'57" East, 880.50 feet; thence South 52°32'22" West,

333.54 feet, to a point on the West line of said Section 19, and to Reference Point "CC", and to the POINT OF ENDING;

46kV Line 18A (Segment 2)
And also commencing at previously stated Reference Point "CC"; thence South 52°32'22" West, 157.93 feet; thence South 52°07'03" West, 193.56 feet, to a point on the East and West one-quarter line of said Section 24, and to the POINT OF BEGINNING; thence South 51°53'20" West, 215.22 feet; thence South 60°49'14" West, 608.17 feet; thence South 18°52'43" East, 2577.20 feet; thence South 15°34'51" East, 555.45 feet; thence South 83°02'50" East, 67.27 feet; thence South 06°10'12" East, 226.22 feet, to a point on the Hodenpyl Dam Substation fence, and the POINT OF ENDING.

Legal Description: Hodenpyl Dam Substation Easement
A substation easement in part of the Northeast one-quarter of Section 25, Township 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, more fully described as follows:
Commencing at the Southeast corner of said Section 25; thence North 01°24'22" East, 2622.86 feet, along the East line of said Section 25 to the East 1/4 corner of said Section 25; thence North 02°43'29" West, 864.44 feet, to the POINT OF BEGINNING; thence South 48°20'41" West, 141.00 feet, to a point in the centerline of No. 1 Road; thence South 61°07'22" West, 227.00 feet, along the centerline of said No. 1 Road; thence South 62°52'07" West, 200.00 feet, along the centerline of said No. 1 Road; thence North 01°13'01" West, 330.00 feet; thence North 49°01'47" East, 355.00 feet; thence South 52°50'31" East, 167.00 feet; thence South 27°44'44" East, 189.00 feet, to the POINT OF BEGINNING.

Loud Project
Legal Description: Centerlines for Existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the Southwest one-quarter of said Section 21; thence North 00°24'02" West, 2,575.33 feet, along the West line of said Section 21 to a point on the East and West one-quarter line of said Section 21; thence North 87°42'26" East, 531.22 feet, along the East and West one-quarter line of said Section 21, to the POINT OF BEGINNING, and REFERENCE POINT "A"; thence North 46°18'25" East, 713.13 feet; thence North 42°07'27" East, 309.95 feet; thence North 41°50'49" East, 412.83 feet, to REFERENCE POINT "B"; thence North 88°28'54" East, 311.59 feet; thence North 76°02'36" East, 120.58 feet, to a point on the Easterly FERC Project Boundary line, and the POINT OF ENDING, and REFERENCE POINT "C".

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 40°04'15" East, 74.98 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated POINT "B"; thence South 89°35'29" West, 166.11 feet, to the POINT OF ENDING.

Legal Description: Centerline for Existing HVD Electric Facilities Easement Areas

The centerlines of existing electric facilities easement areas located in Sections 19 and 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerlines being described as follows:

46 kV line 29T
Commencing at Previously stated REFERENCE POINT "C"; thence South 00°02'55" East, 95.70 feet, along the Easterly FERC Project Boundary line to the POINT OF BEGINNING; thence South 57°14'41" West, 49.29 feet; thence South 78°34'52" West, 762.25 feet; thence North 01°11'14" West, 104.52 feet, to REFERENCE POINT "D"; thence North 01°11'14" West, 20.27 feet; to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 66A (segment 1)
BEGINNING at previously stated REFERENCE POINT "A"; thence North 46°18'25" East, 713.13 feet; thence North 42°07'27" East, 309.95 feet; thence North 72°04'53" West, 180.51 feet; thence North 11°50'24" East, 113.84 feet; thence North 28°07'46" East, 40.27 feet, to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 66A (segment 2)
Commencing at the Southwest corner of said Section 19; thence North 89°19'55" East, 17.38 feet, along the South line of said Section 19, to the POINT OF BEGINNING and REFERENCE POINT "E"; thence North 53°57'04" East, 229.63 feet; thence North 89°23'12" East, 3401.81 feet, more or less, to the East one-eighth line of said Section 19, and the POINT OF ENDING.

46 kV line 29A (segment 1)
Commencing at the Southwest one-quarter of said Section 21; thence North 00°24'02" West, 2,575.33 feet, along the West line of said Section 21 to a point on the East and West one-quarter line of said Section 21;thence North 87°42'26" East, 456.37 feet, along the East and West one-quarter line of said Section 21, to the POINT OF BEGINNING; thence North 46°18'37" East, 741.31 feet; thence North 13°28'54" East, 261.24 feet; thence North 13°53'40" East, 134.35 feet; thence North 26°36'35" East, 38.79 feet, to a point on the Southerly Loud Dam Substation fence, and the POINT OF ENDING.

46 kV line 29A (segment 2)
Commencing at REFERENCE POINT "E"; thence North 89°19'55" East, 79.88 feet, along the South line of said Section 19, to the POINT OF BEGINNING; thence North 53°45'35" East, 130.18 feet; thence North 88°28'52" East, 614.93 feet; thence North 89°26'25" East, 2787.39 feet, more or less, to a point on the East one-eighth line of said Section 19, and the POINT OF ENDING.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (feet) on each side of the following described centerline located in the Northwest one-quarter of Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, said centerline described as:

Commencing at the Southeast corner of said Section 21; thence North 00°32'23" West, 2631.40 feet, along the East line of said Section 21, to the East one-quarter corner of said Section 21; thence North 00°20'39" West, 891.25 feet, along the East line of said Section 21; thence South 89°39'41" West, 3712.88 feet, to a

point on the centerline of Loud Dam Road and the POINT OF BEGINNING; thence South 83°55'57" West, 62.17 feet; thence Southwesterly, 69.17 feet, along the arc of a 115.00 foot radius curve to the left, the central angle of which is 34°27'41", and the long chord of which bears South 66°42'06" West, 68.13 feet; thence South 49°28'16" West, 21.04 feet; thence Southwesterly, 92.68 feet, along the arc of a 300.00 foot radius curve to the left, the central angle of which is 17°42'02", and the long chord of which bears South 40°37'14" West, 92.31 feet; thence South 31°46'13" West, 38.52 feet; thence North 83°42'39" West, 20.43 feet, to the POINT OF ENDING. The sidelines of said easement are to be extended or shortened to begin perpendicular and adjacent to the POINT OF BEGINNING and ending on a line having a bearing of South 08° 14'17" West.

Legal Description: Loud Dam Substation Easement
Substation easement located in the Northwest one-quarter of Section 21, Town 24 North, Range 06 East, Oscoda Township, Iosco County, Michigan, being described as follows:

BEGINNING at REFERENCE POINT "D"; thence North 81°45'43" West, 95.54 feet; thence North 13°12'33" East, 184.78 feet; thence South 81°45'43" East, 193.08 feet; thence South 08°14'17" West, 184.09 feet; thence North 81°45'43" West, 113.55 feet, to the POINT OF BEGINNING.

Mio Project
Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located in Section 7, Town 26 North, Range 03 East, Mentor Township, Oscoda County, Michigan, and in Sections 2, 3, 5, 10, 11, and 12, Town 26 North, Range 02 East, Big Creek Township, Oscoda County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the East one-quarter corner of said Section 12; thence North 00°21'07" West, 758.90 feet, along the East line of said Section 12, to Reference Point "A", and to the POINT OF BEGINNING; thence South 78°41'13" West, 178.48 feet, to Reference Point "K"; thence South 29°33'26" West, 371.10 feet; thence South 15°07'43" West, 944.60 feet, to Reference Point "B"; thence continuing South 15°07'43" West, 81.41 feet, to Reference Point "C"; thence South 80°59'59" West, 1797.75 feet, to Reference Point "D"; thence continuing South 80°59'59" West, 361.81 feet, to Reference Point "E"; thence continuing South 80°59'59" West, 746.00 feet, to Reference Point "F"; thence South 52°14'31" West, 2519.97 feet, thence South 00°03'31" West, 59.14 feet, to Reference Point "M"; thence continuing South 00°03'31" West, 19.82 feet, more or less, to a point on the South line of said Section 11, and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "A"; thence North 78°41'13" East, 328.83 feet; thence North 87°17'54" East, 81.66 feet, to a point on the Westerly right of way line of State Highway M-33/M-72/South Mount Tom Road, and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "B"; thence South 16°42'03" East, 844.77 feet, to Reference Point "N", and to a point on the South one-eighth line of said Section 12; thence North 58°49'05" East, 32.03 feet, to a point on the West line of Lot 12, Block 14, of the Amended Plat of part of

Blocks 5, 6, 14, vacated alley, vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "C"; thence North 81°41'01" East, 43.40 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "D"; thence North 39°30'20" West, 322.24 feet; thence North 32°40'42" West, 225.88 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "E"; thence North 23°29'19" West, 176.87 feet, to the POINT OF ENDING.

And Also BEGINNING at previously stated Reference Point "F"; thence North 60°18'38" West, 294.48 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "M"; thence North 71°31'10" East, 84.88 feet; thence South 87°43'52" East, 192.58 feet; North 90°00'00" East, 134.80 feet; thence South 89°54'44", 366.24 feet; thence North 88°56' 48" East, 64.86 feet, more or less, to a point on the East line of the West one-half of the Southwest one-quarter of the Southwest one-quarter, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "K"; thence North 00°55'30" West, 120.75 feet; thence North 16°51'52" East, 274.83 feet; thence North 41°25'12" East, 182.67 feet, to Reference Point "G"; thence North 05°52'12" West, 23.54 feet, to Reference Point "H"; thence South 88°55'19" West, 320.48 feet; thence North 89°18'34" West, 554.97 feet, to Reference Point "I"; thence continuing North 89°18'34" West, 351.27 feet; thence North 01°07'25" West, 37.43 feet, more or less to a point on the North one-eighth line of said Section 12, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "G"; thence North 59°01'22" East, 143.37 feet, more or less, to a point on the North one-eighth line of said Section 7, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "H"; thence North 00°19'21" West, 49.63 feet, to a point on the North one-eighth line of said Section 7, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "I"; thence North 00°00'53" West, 43.76 feet, to a point on the North one-eighth line of said Section 12, and to the POINT OF ENDING.

LVD2
Commencing at the East one-quarter corner of said Section 12; thence South 00°20'56" East, 592.74 feet, along the East line of said Section 12, to a point on a line being described as the South line of the North 100 feet of the South 2143.68 feet of the East 360' feet of the Southeast one-quarter of said Section 12; thence South 89°40'57" West, 31.33 feet, along said South line, to the POINT OF BEGINNING; thence South 50°55'10" West, 23.63 feet; thence South 08°07'33" West, 288.01 feet; thence South 23°13'15" East, 119.38 feet, to a point on the North Line of the Amended Plat of part of Blocks 5, 6, 14, Vacated Alley, Vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

LVD3
Commencing at the West one-quarter corner of said Section 3; thence North 89°55'58" East, 714.13 feet, along the East and West one-quarter line of said Section 3, to the POINT OF BEGINNING; thence South 07°59'25" West, 62.05 feet, to Reference Point "O", and to the POINT OF ENDING.

LVD4
Commencing at the Southwest corner of said Section 3; thence South 89°54'48" East, 1331.39 feet, along the South line of said Section 3, to the POINT OF BEGINNING; thence North 03°23'28" East, 658.44 feet; thence North 58°07'08" West, 216.27 feet, to the POINT OF ENDING.

LVD5
Commencing at the North one-quarter corner of said Section 5; thence South 89°47'30" East, 517.46 feet, along the North line of said Section 5, to the POINT OF BEGINNING; thence South 77°29'23" West, 527.89 feet, more or less, to a point on the North and South one-quarter line of said Section 5, and to the POINT OF ENDING.

LVD6
Commencing at the North one-quarter corner of said Section 5; thence South 01°01'54" East, 1346.05 feet, along the North and South one-quarter line of said Section 5, to the POINT OF BEGINNING; thence North 48°10'47" East, 232.17 feet, to the POINT OF ENDING.

LVD7
Commencing at the North one-quarter corner of said Section 5; thence South 01°01'54" East, 2629.42 feet, along the North and South one-quarter line of said Section 5, to the POINT OF BEGINNING; thence North 89°05'34" East, 648.04 feet; thence South 64°42'35" East, 367.01 feet; thence South 53°07'06" East, 276.22 feet, to the POINT OF ENDING.

LVD8
Commencing at the East one-quarter corner of said Section 3; thence South 89°55'58" West, 2275.63 feet, along the East and West one-quarter line of said Section 3, to the POINT OF BEGINNING and Reference Point "S"; thence South 57°39'23" East, 122.61 feet; thence South 87°49'59" East, 698.33 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "S"; thence North 57°39'23" West, 124.39 feet; thence North 41°52'17" West, 252.41 feet; thence North 40°53'45" West, 161.61 feet, more or less, to a point on the North and South one-quarter line of said Section 3, and the POINT OF ENDING.

LVD9
Commencing at the West one-quarter corner of said Section 2; thence South 00°02'49" East, 1,325.63 feet, along the West line of said Section 2, to the Southwest corner of the Northwest one-quarter of the Southwest one-quarter of said Section 2; thence South 89°43'01" East, 316.23 feet, along the South one-eighth line of said Section 2; thence South 00°16'59" West, 16.11 feet, to the POINT OF BEGINNING; thence South

89°51'48" East, 212.40 feet; thence North 83°07'47" East, 125.04 feet, more or less, to a point on the South one-eighth line of said Section 2, to Reference Point "P", and to the POINT OF ENDING.

And also commencing at previously stated Reference Point "P"; thence South 89°43'01" East, 1258.33 feet, along the South one-eighth line of said Section 2, to the POINT OF BEGINNING; thence South 80°54'37" East, 294.00 feet; thence North 78°45'14" East, 312.42 feet, to Reference Point "Q"; thence South 84°32'12" East, 152.09 feet, to the North-South one-quarter line of said Section 2, and the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "Q"; thence South 00°20'49" East, 293.81 feet; thence South 30°28'28" East, 233.54 feet, to a point on the Westerly right of way of Maier Court, and to the POINT OF ENDING.

LVD10
Commencing at the Northwest corner of said Section 12; thence South 00°01'31" East, 8.22 feet, along the West line of said Section 12; thence South 89°50'12" West, 128.69 feet, to the POINT OF BEGINNING; thence North 89°50'12" East,556.89 feet; thence North 00°08'43" West, 5.00 feet, to a point on the North line of said Section 12, and to the POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facility Area
The centerlines of existing underground electric facility easement areas located in Section 3 and12, Big Creek Township, Oscoda County, Michigan, said centerlines being described as follows;

U/G Elec.1
BEGINNING at previously stated Reference Point "N"; thence North 74°14'35" East, 15.07 feet; thence North 65°06'46" East, 14.27 feet, to a point on the West line of Lot 12, Block 14, of the Amended Plat of part of Blocks 5, 6, 14, vacated alley, vacated Deyarmond Street & 4th Street of the Map of the Village of Mio, and to the POINT OF ENDING.

U/G Elec.2
BEGINNING at previously stated Reference Point "O"; thence South 02°03'17" West, 109.22 feet; thence South 12°46'14" West, 103.71 feet; thence South 15°13'54" West, 29.97 feet; thence South 04°30'23" East, 24.28 feet; thence South 19°59'01" West, 32.46 feet; thence South 05°41'17" West, 133.32 feet; thence South 03°53'24" West, 118.94 feet; thence South 11°55'10" West, 77.74 feet; thence South 06°03'22" West, 154.91 feet; thence South 05°04'06" West, 158.71 feet; thence South 09°24'55" West, 194.85 feet; thence South 03°37'49" West, 39.19 feet; thence continuing South 03°37'49" West, 27.21 feet; thence South 30°53'54" East, 88.56 feet; thence South 20°27'43" East, 31.71 feet; thence South 34°07'32" East, 46.66 feet; thence South 32°31'07" East, 28.91 feet; thence South 12°03'33" East, 18.47 feet; thence South 34°52'32" East, 60.04 feet; thence South 42°39'12" East, 41.83 feet; thence South 49°25'57" East, 41.25 feet; thence South 50°43'36" East, 457.53 feet; thence South 54°54'17" East, 59.25 feet, to the POINT OF ENDING.

Proposed U/G Elec.1
Commencing at the Southwest corner of said Section 3; thence South 89°54'48" East, 524.88 feet, along the South line of said Section 3, to the POINT OF BEGINNING; thence Northeasterly, 54.84 feet, along

the arc of a 753.24 foot radius curve to the left, the central angle of which is 04°10'16", and the long chord of which bears North 50°27'38" East, 54.82 feet, to REFERENCE POINT "R"; thence Northeasterly, 110.47 feet, along the arc of a 753.24 foot radius curve to the left, the central angle of which is 08°24'10", and the long chord of which bears North 44°10'25" East, 110.37 feet; thence North 39°58'12" East, 531.29 feet; thence Northeasterly, 216.39 feet, along the arc of a 679.24 foot radius curve to the right, the central angle of which is 18°15'12", and the long chord of which bears North 49°05'39" East, 215.48 feet; thence South 43°40'25" East, a distance of 198.59 feet; thence North 46°19'35" East, 6.00 feet; thence North 43°40'25" West, 1680.22 feet; thence North 00°40'09" East, 851.62 feet; thence North 01°01'44" West, 50.59 feet, to a point on the East-West one quarter line of said Section 3, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "R"; thence South 26°38'41" East, 39.15' to a point on the South line of said Section 3, and the POINT OF ENDING.

Rogers Project

Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas.

The centerlines of existing electric facilities easement areas located in Sections 1,2,11, and 14 Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

LVD1

Commencing at the West one-quarter corner of said Section 14; thence North 89°02'14" East, 33.77 feet, along the East and West one-quarter line of said Section 14, to the POINT OF BEGINNING; thence North 33°03'43" West, 24.73 feet; thence North 88°51'51" West, 20.24 feet, to a point on the West line of said Section 14, and the Westerly FERC Project Boundary line, and the POINT OF ENDING.

LVD2

Commencing at the Center one-quarter corner of said Section 14; thence North 00°53'28" East, 19.12 feet, along the North and South one-quarter line of said Section 14, to the POINT OF BEGINNING; thence South 88°16'11" West, 278.42 feet; thence South 89°53'46" West, 463.40 feet; thence North 65°49'51" West, 428.41 feet; thence North 78°12'22" West, 188.59 feet; thence North 85°06'28" West, 27.32 feet, more or less, to a point on the West one-eighth line of said Section 14, and the POINT OF ENDING, and REFERENCE POINT "A".

LVD3

Commencing at previously stated REFERENCE POINT "A"; thence North 00°29'51" East, 44.80 feet, along the West one-eighth line of said Section 14, to the POINT OF BEGINNING; thence North 49°42'38" East, 181.23 feet; thence North 40°22'57" East, 998.22 feet; thence North 05°59'49" West, 935.82 feet; thence North 29°10'22" West, 598.90 feet to REFERENCE POINT "B"; thence North 04°24'11" East, 62.41 feet, to REFERENCE POINT "C"; thence North 38°45'28" West, 129.12 feet; thence North 25°54'46" West, 113.73 feet; thence North 22°39'23" West, 128.72 feet, to the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "B"; thence North 69°46'39" East, 41.78 feet, to a point on the Stanwood Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 69°15'10" East, 36.13 feet, to a point on the Stanwood Substation fence and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "C"; thence South 62°34'08" West, 91.58 feet; thence South 86° 02'30 West, 740.99 feet; thence South 70°51'35" West, 74.89 feet to REFERENCE POINT "K"; thence North 26°33'40" West, 106.97 feet; thence South 69°13'24" West, 207.61 feet; thence North 26°17'28" West, 19.45 feet, more or less, to the boundary line of Consumers Energy parcel recorded in Liber 143, Page 92 and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "K"; thence South 08°51'25" West, 87.51 feet; thence South 18°44'29" East, 203.82 feet; thence North 83°27'52" East, 8.08 feet, more or less, to a point on the Easterly right of way line of Northland Drive, and the POINT OF ENDING.

LVD4
Commencing at the Southeast corner of said Section 2; thence North 89°27'49" West, 1242.54 feet, along the South line of said Section 2; thence North 00°32'11" East, 206.50 feet, to the POINT OF BEGINNING; thence South 89°15'36" West, 338.52 feet, more or less, to a point on the West line of Consumers Energy parcel recorded in Liber 144, Page 243, Mecosta County Records, and the POINT OF ENDING.

LVD5
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 2595.85 feet, along the East line of said Section 2, to REFERENCE POINT "M", and the POINT OF BEGINNING; thence North 49°05'15" West, 117.24 feet, to REFERENCE POINT "N"; thence South 36°26'52" West, 76.16 feet, more or less, to a point on the East and West one-quarter line of said Section 2, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "M"; thence South 47°11'37" East, 48.89 feet, more or less, to a point on the East line of Consumer Energy parcel recorded in Liber 177, Page 524, Mecosta County Records, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "N"; thence North 13°43'47" East, 164.93 feet, more or less, to a point on the Northerly line of parcel recorded in Liber 177, Page 524, Mecosta County Records, and the POINT OF ENDING.

Legal Description: Centerlines for existing HVD Electric Facilities Easement Areas.
The centerlines of existing electric facilities easement areas located in Sections 1,2,11 and 14, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerlines being described as follows:

46 kV line 19C
Commencing at previously stated REFERENCE POINT "A", thence North 00°29'51" East, 48.22 feet, along the West one-eighth line of said Section 14, to the POINT OF BEGINNING; thence North 48°59'26" East, 177.83 feet; thence North 40°28'46" East, 997.66 feet; thence North 05°59'52" West, 933.06 feet; thence North 29°31'47" West, 295.74 feet; thence North 28°54'20" West, 303.61 feet; thence North

43°24'54" West, 144.66 feet; thence North 43°25'15" West, 81.00 feet, to a point on the Rogers Dam Substation fence and the POINT OF ENDING.

46kV line 19W (segment 1)
Commencing at the North one-quarter corner of said Section 14; thence South 00°53'28" West, 35.96 feet, along the North and South one-quarter line of said Section 14, to the POINT OF BEGINNING, and REFERENCE POINT "L"; thence North 89°22'42" West, 661.96 feet to REFERENCE POINT "F"; thence South 89°04'33" West, 87.22 feet; thence North 61°50'23" West, 254.06 feet; thence North 63°04'39" West, 159.57 feet; thence South 34°36'58" West, 35.21 feet, to a point on the Rogers Dam Substation fence, and the POINT OF ENDING.

And also, BEGINNING at previously stated REFERENCE POINT "L"; thence South 89°22'42" East, 1100.15 feet, to the southerly extension of the East line of the West 40 acres of Government Lot 3 of said Section 11, and the POINT OF ENDING.

46kV line 19W (segment 2)
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 948.54 feet; along the East line of said Section 2; thence North 89°54'05" East, 31.05 feet, to the POINT OF BEGINNING; thence North 00°05'55" West, 93.43 feet, more or less, to the Easterly extension of the Northerly line of Consumers Energy property described in Liber 144, Page 243, and the POINT OF ENDING.

46kV line 19W (segment 3)
Commencing at the Southeast corner of said Section 2; thence North 00°09'10" West, 2528.64 feet, along the East line of said Section 2; thence North 41°59'05" West, 7.91 feet to the POINT OF BEGINNING; thence North 41°59'05" West, 62.97 feet; thence North 00°04'26" East, 251.47 feet, to a point on the Northerly line of parcel recorded in Liber 177, Page 524, and the POINT OF ENDING.

46kV line 19AR
BEGINNING at previously stated REFERENCE POINT "F"; thence South 64°36'50" West, 86.22 feet; thence South 88°48'11" West, 100.70 feet, to a point on the Easterly Stanwood Substation fence, and the POINT OF ENDING.

Legal Description: Access Easement Rogers Dam Substation and Access Easement Stanwood Substation.
A strip of land 20 feet in width being 10 feet on each side of the following described centerline located in the Southwest one-quarter of Section 11, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said centerline described as:

Commencing at the South one-quarter corner of said Section 11; thence South 88°48'01" West, 626.70 feet along the South line of said Section 11 to a point on the centerline of 10 Mile Road, and the POINT OF BEGINNING; thence Northwesterly 117.92 feet, along the arc of a 374.70 foot radius curve to the right, the central angle of which is 18°01'51" and the long chord of which bears North 53°38'19" West, 117.43 feet, to REFERENCE POINT "H"; thence North 41°43'11" West, 57.61 feet; thence Northwesterly 94.56 feet along the arc of a 400.00 foot radius curve to the Left, the central angle of which is 13°32'42" and the long chord of which bears North 48°29'32" West, 94.34 feet; thence North 55°15'53" West, 166.00 feet;

thence North 57°09'13" West, 134.27 feet; thence South 14°54'13" West, 26.70 feet; thence South 13°20'23" East, 80.27 feet; thence South 71°29'42" West, 57.76 feet; thence South 34°07'09" West, 46.91 feet, to the POINT OF ENDING, and REFERENCE POINT "I"

And also BEGINNING at previously established REFERENCE POINT "H"; thence South 55°00'43" West, 40.60, feet to the POINT OF ENDING, and REFERENCE POINT "J"

The sideline of said 20 foot side access easement are to be extended and shortened to meet at angle points beginning on the South line of said Section 11, and ending on the Stanwood Substation Easement and Rogers Dam Substation Easement.

Legal Description: Rogers Dam Substation Easement and Stanwood Substation Easement.
Substation easements located in the Southwest one-quarter of Section 11, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, said easement described as**:**

Rogers Dam Substation Easement
BEGINNING at previously established REFERENCE POINT "I"; thence South 52°55'16" East, 84.94 feet; thence South 37°04'44" West, 125.65 feet; thence North 52°55'16" West, 95.30 feet; thence North 37°04'44" East, 125.65 feet; thence South 52°55'16" East, 10.36 feet, to the POINT OF BEGINNING.

Stanwood Substation Easement
BEGINNING at previously established REFERENCE POINT "J"; thence South 01°05'08" East, 149.11 feet; thence South 88°54'52" West, 219.16 feet; thence North 01°05'08" West, 149.11 feet; thence North 88°54'52" East, 219.16 feet, to the POINT OF BEGINNING.

Tippy Project
Legal Description: Centerlines for existing LVD Electric Facilities Easement Areas
The centerlines of existing electric facilities easement areas located Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, and Section 5 and 6, Town 21 North, Range 13 West, Norman Township, Manistee County, Michigan, said centerlines being described as follows:

LVD1
Commencing at the Southwest corner of said Section 31; thence South 87°12'16" East, 36.73 feet, along the South line of said Section 31; thence North 01°06'18" East, 184.00 feet, to a point on the line 184 feet North of the South line of said Section 31, and to the POINT OF BEGINNING; thence continuing, North 01°06'18" East, 790.80 feet; thence North 66°27'27" East, 286.20 feet, to Reference Point “A”; thence continuing North 66°27'27" East, 122.21 feet, to Reference Point “B”; thence continuing North 66°27'27" East, 222.11 feet; thence North 09°35'51" East, 199.73 feet; thence North 49°22'14" West, 121.64 feet; thence North 30°52'46" West, 235.44 feet, to Reference Point “C”; thence North 84°03'26" West, 219.48 feet; thence North 13°27'08" West, 209.12 feet; thence North 01°58'51" East, 724.74 feet; to Reference Point “D”; thence North 33°42'53" East, 205.88 feet; thence North 01°25'51" East, 202.17 feet, to Reference Point “F”, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “A”; thence North 62°07'50” West, 311.34 feet, to a point on the West line of said Section 31, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “B”; thence South 87°45'18” East, 199.27 feet, to a point on the Westerly Synder Substation fence line, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “C”; thence North 14°56'43" East, 132.43 feet; thence North 42°19'26" East, 220.90 feet; thence North 07°05'02" East, 49.71 feet, to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point “D”; thence North 02°02'02” East, 75.15 feet, to Reference Point “E”, and to the POINT OF ENDING.

LVD2
Commencing at the Southwest corner of said Section 31; thence South 87°12'16" East, 1385.23 feet, along the South line of said Section 31; thence North 00°52'13" East, 28.80 feet, to the POINT OF BEGINNING; thence South 87°16'08" East, 69.32 feet; thence South 77°21'50" East, 169.05 feet, more or less, to a point on the South line of said Section 31, and to the POINT OF ENDING.

LVD3
Commencing at the West one-quarter corner of said Section 5; thence North 01°50'54" East, 2131.30 feet, along the West line of said Section 5, to the POINT OF BEGINNING and Reference Point "J"; thence North 87°27'04" East, 77.97 feet, to Reference Point “I”, and to the POINT OF ENDING.

And also BEGINNING at previously stated Reference Point "J"; thence South 87°26'34" West, 225.06 feet, more or less, to a point on the South line of parcel described in parcel number 10-006-100-00, and POINT OF ENDING.

Legal Description: Centerlines for existing underground Electric Facilities Areas
The centerlines of existing underground electric facilities easement areas located in Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, and Section 5, Town 21 North, Range 13 West, Norman Township, Manistee County, Michigan, said centerline being described as follows:

U/G Elec.1
BEGINNING at previously stated Reference Point “E”; thence South 21°18'28" East, 13.67 feet; thence South 41°51'16" West, 12.61 feet; thence South 58°38'18" West, 44.83 feet; thence South 71°39'15" West, 19.89 feet; thence South 78°12'01" West, 87.74 feet; thence North 17°01'17" West, 38.52 feet, to the POINT OF ENDING.

U/G Elec.2
BEGINNING at previously stated Reference Point “F”; thence North 37°48'56" West, 10.11 feet; thence North 00°25'19" West, 68.22 feet; thence North 03°44'03" West, 137.79 feet, to the POINT OF ENDING.

U/G Elec.3

BEGINNING at previously stated Reference Point “I”; thence North 05°07'53" West, 104.52 feet, to the POINT OF ENDING.

and also BEGINNING at previously stated Reference Point "I"; thence South 83°12'14" East, 19.62 feet, to the POINT OF ENDING.

Legal Description: Access Easement
A strip of land thirty (30) feet in width being fifteen (15) feet on each side of the following described centerline located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, said centerline described as:

Commencing at the Southwest corner of said Section 31; thence North 00°47'15" East, 1009.77 feet, along the West line of said Section 31, to the POINT OF BEGINNING; thence South 89°12'45" East, 33.00 feet; thence North 74°38'38" East, 10.06 feet; thence Northeasterly, 63.67 feet, along the arc of a 400.00 foot radius curve to the left, the central angle of which is 09°07'14", and the long chord of which bears North 70°05'01" East, 63.61 feet; thence North 65°31'24" East, 248.62 feet; thence Northeasterly, 142.12 feet, along the arc of a 351.41 foot radius curve to the right, the central angle of which is 23°10'19", and the long chord of which bears North 77°06'34" East, 141.15 feet; thence North 88°41'44" East, 125.65 feet, to Reference Point “G”, and to the POINT OF ENDING of said ingress and egress easement centerline.

The sidelines of said easement centerline are to be extended or shortened to meet at angle points beginning on the West line of said Section 31, and ending on a line having a bearing of North 00°00'00" East.

Legal Description: Snyder Substation Easement
A substation easement located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, more particularly described as follows:

BEGINNING at previously stated Reference Point “G; thence North 00°00'00" East, 48.45 feet; thence North 90°00'00" East, 162.49 feet, to Reference Point "H", thence continuing North 90°00'00" East, 13.40 feet; thence South 00°00'00" East, 149.67 feet; thence North 90°00'00" West, 175.89 feet; thence North 00°00'00" East, 101.22 feet, to the POINT OF BEGINNING.

Legal Description: Centerline of 138kV Facilities Easement Area Line No. 1O
The centerline of an existing electric facilities easement area located in the West one-half of Section 31, Town 22 North, Range 13 West, Dickson Township, Manistee County, Michigan, said centerline being described as follows:

BEGINNING at previously stated Reference Point "H"; thence North 05°07'24" West, 41.62 feet, to a point on an existing 138kV Line No. 1B, and the POINT OF BEGINNING; thence South 05°07'24" East, 139.41 feet; thence South 89°11'31" West, 21.08 feet, to a point on the Easterly Synder Substation fence line, and the POINT OF ENDING.

Webber Project
Legal Description: Centerline for Existing LVD Electric Facilities Easement Area

The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:
Commencing at the North 1/4 Corner of said Section 33; thence South 00° 24' 47" West 1363.35 feet along the North-South 1/4 Line of said Section 33 to the Point of Beginning; thence South 79° 01' 47" East 374.63 feet to the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 15B
The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:
Commencing at the North 1/4 Corner of said Section 33; thence South 89° 38' 54" East 243.09 feet along the North Line of Said Section 33; thence South 32° 06' 49" East 1108.60 feet, more or less, to the North property line of a Consumers Energy Parcel as described in a deed to Commonwealth Power Company dated April 7, 1906 and to the Point of Beginning; thence South 32° 06' 49" East 488.13 feet; thence South 24° 51' 19" East 866.38 feet to Reference Point 'A'; thence South 69° 14' 04" West 85.36 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.
AND
Beginning at Reference Point 'A'; thence South 45° 35' 40" East 39.61; thence South 81° 06' 40" West 100.05 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.
AND
Beginning at Reference Point 'A'; thence South 23° 56' 39" East 42.75 feet to the Point of Ending.
AND
Beginning at Reference Point 'A'; thence North 75° 50' 24" West 23.58 feet; thence South 22° 50' 40" East 57.01 feet to the Point of Ending.
AND
Beginning at Reference Point 'A'; thence North 75° 50' 24" West 23.58 feet; thence South 66° 36' 02" West 66.85 feet to the Easterly Line of Webber Dam Substation Easement and the Point of Ending.

Legal Description: Centerline for Existing 46 kV Facilities Easement Area Line 15R
The centerline of an existing electric facilities easement area located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:
Commencing at the East 1/4 Corner of said Section 33; thence North 00° 26' 50" East 45.56 feet along the East Line of said Section 33; thence North 89° 41' 48" West 360.44 feet; thence North 66° 40' 02" West 322.73 feet to the East Line of the West 1/2 of the East 1/2 of the Northeast Fractional 1/4 of said Section 33, as monumented, and to the Point of Beginning; thence North 66° 40' 02" West 528.88 feet; thence North 66° 37' 11" West 118.39 feet to the Southeasterly Line of Webber Dam Substation Easement and the Point of Ending.

Legal Description: Access Easement
A strip of land twenty (20) feet in width being ten (10) feet on each side of the following described centerline located in the Northeast 1/4 of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, said centerline described as follows:

Commencing at the East 1/4 Corner of said Section 33; thence North 89° 56’ 04” West 1330.38 feet along the East-West 1/4 Line of said Section 33 to the Point of Beginning; thence 66.21 feet along a non-tangential curve to the right, said curve having a central angle of 66° 39' 58”, a radius of 56.91 feet, and a long chord distance of 62.54 feet bearing North 57° 23' 43” East; thence South 89° 16’ 18” East 171.29 feet; thence 109.45 feet along a curve to the left, said curve having a central angle of 70° 05’ 22”, a radius of 89.47 feet, and a long chord distance of 102.75 feet bearing North 55° 41’ 01” East; thence North 20° 38’ 20” East 16.30 feet to Reference Point ‘B’; thence North 20° 38’ 20” East 16.30 feet; thence 67.56 feet along a curve to the left, said curve having a central angle of 33° 15’ 56”, a radius of 116.36 feet, and a long chord distance of 66.61 feet bearing North 04° 00’ 22” East; thence North 12° 37’ 36” West 78.02 feet; thence 172.87 feet along a curve to the right, said curve having a central angle of 58° 47’ 26”, a radius of 168.47 feet, and a long chord distance of 165.38 feet bearing North 16° 46’ 08” East; thence North 23° 39’ 36” West 33.18 feet; thence 88.58 feet along a curve to the left, said curve having a radius of 82.06 feet; and a long chord distance of 84.34 feet bearing North 54° 34’ 56” West; thence North 85° 30’ 15” West 78.62 feet; thence South 78° 43’ 56” West 111.34 feet to the Easterly line of the Existing Webber Dam Substation Easement and the Point of Ending.

AND
Commencing at Reference Point ‘B’; thence South 70° 31’ 59” East 62.41 feet to the Point of Ending.

Legal Description: Webber Substation Easement Area
An easement in part of the Northeast one-quarter of Section 33, Township 7 North, Range 5 West, Lyons Township, Ionia County, Michigan, more particularly described as follows:

Commencing at the Center of said Section 33; thence East, along the East-West one-quarter line, 1980 feet (120 rods) more or less to the East line of the West half of the Southeast one-quarter of the Northeast one quarter of said section, as monumented, and to the Point of Beginning; thence North, along the East line of the West half of the Southeast one-quarter of the Northeast one-quarter of said Section, as monumented, 250 feet; thence West, parallel with the East-West one-quarter line of said Section, 300 feet; thence South, parallel with the East line of the West half of the Southeast one-quarter of the Northeast one-quarter of said Section, as monumented, 250 feet; thence East, along the East-West one-quarter line of said Section, 300 feet to the Point of Beginning.

REDACTED

EXHIBIT P

Form of Transition Services Agreement

[Attached.]

TRANSITION SERVICES AGREEMENT

by and between

CONSUMERS ENERGY COMPANY

and

CONFLUENCE HYDRO, LLC

THIS DOCUMENT IS NOT INTENDED TO CREATE, NOR DOES IT CREATE, A LEGALLY BINDING OR ENFORCEABLE OFFER OR AGREEMENT OF ANY TYPE OR NATURE, UNLESS AND UNTIL AGREED TO AND EXECUTED BY THE PARTIES HERETO.

TRANSITION SERVICES AGREEMENT

THIS TRANSITION SERVICES AGREEMENT is made and entered into as of [●], [●] (the "Effective Date"), by and between CONSUMERS ENERGY COMPANY, a Michigan corporation ("Service Provider"), and CONFLUENCE HYDRO, LLC, a Delaware limited liability company, ("Service Recipient"). Service Provider and Service Recipient may be referred to herein individually, as a "Party" and together, as the "Parties." Capitalized terms used but not otherwise defined herein have the meanings set forth in the Purchase Agreement (as defined below).

Background

A. Pursuant to the Purchase and Sale Agreement, dated as of September 3, 2025 (the "Purchase Agreement"), by and between Service Provider and Service Recipient, Service Recipient will purchase and assume from Service Provider, and Service Provider will sell and assign to Service Recipient, the Project Assets.

B. Immediately after the consummation of the sale under the Purchase Agreement, Service Recipient intends to transfer the Project Assets to wholly owned subsidiaries (each a "Subsidiary", and collectively the "Subsidiaries").

C. Pursuant to Section 7.13 of the Purchase Agreement the Parties wish to enter into an agreement setting forth the terms pursuant to which Service Provider will, commencing on the Closing Date, provide (directly or through its Affiliates or one or more Third-Party Service Providers consistent with the terms hereof) certain services on an interim basis with respect to Service Recipient's operation of the Projects.

NOW THEREFORE, in consideration of the mutual covenants and undertakings contained herein, and on the terms and subject to the conditions set forth herein, the Parties hereby agree as follows:

Section 1. Definitions.

As used in this Agreement, the following terms shall have the meanings set forth or as referenced below:

"Agreement" means this Transition Services Agreement between the Parties hereto, as the same may be amended or supplemented from time to time in accordance with the terms hereof.

"Confidential Information" has the meaning set forth in Section 9.

"Consent" shall have the meaning set forth in Section 2(k).

"Damages" means the monetary compensation that one Party may be required to pay to another Party in accordance with this Agreement.

"Effective Date" has the meaning set forth in the Preamble.

"Fee Schedule" has the meaning set forth in Section 2(e).

"Force Majeure Event" has the meaning set forth in Section 8.

"IS Policies" has the meaning set forth in Section 2(j)(ii).

"Party" or "Parties" has the meaning set forth in the Preamble.

"Purchase Agreement" has the meaning set forth in the Recitals.

"Representatives" has the meaning set forth in Section 2(g).

"Service" or "Services" has the meaning set forth in Section 2(a).

"Service Provider" has the meaning set forth in the Preamble.

"Service Provider Indemnitees" has the meaning set forth in Section 7(a).

"Service Provider Indemnity Cap" has the meaning set forth in Section 5(a).

"Service Recipient" has the meaning set forth in the Preamble.

"Service Recipient Indemnitees" has the meaning set forth in Section 7(b).

"Subsidiary" or "Subsidiaries" has the meaning set forth in the Recitals.

"Term" has the meaning set forth in Section 4(a).

"Termination Date" means the date this Agreement is terminated pursuant to Section 4.

"Third-Party Service Provider" means a third party engaged by Service Provider to provide the applicable Service(s) in accordance with this Agreement.

Section 2. Services.

(a) Services. Subject to the terms and conditions herein, Service Provider shall provide, or at its option cause one or more of its Affiliates or Third-Party Service Providers to provide, to Service Recipient, and its Subsidiaries, all services identified in Exhibit 1 attached hereto (each a "Service", and collectively, the "Services") for the duration of the Term in a manner consistent with past practice during the Lookback Period. For the avoidance of doubt, no delegation of Service Provider's obligations under this Agreement to any Affiliate or Third-Party Service Provider shall in any way affect Service Recipient's rights or relieve Service Provider of its obligations under this Agreement. The Parties acknowledge and agree that the Services are provided to Service Recipient to enable Service Recipient to continue the operation of the Projects in the ordinary course consistent with past practice during the Lookback Period. The Services may be amended from time to time by written agreement by the Parties.

(b) Scope of Services. Notwithstanding anything to the contrary herein, neither Service Provider nor any of its Affiliates or Third-Party Service Providers will be required to perform or to cause to be performed any of the Services for the direct benefit of any third party or any Person other than Service Recipient, and its Subsidiaries, except as provided in Section 10(h).

(c) Certain Limits on Services. Service Provider shall not be the agent or representative of the Service Recipient, and shall have no authority to undertake any transaction or incur any expenditure for which Service Recipient would be independently liable. Neither Service Provider nor any of its Affiliates or Third-Party Service Providers shall be obligated to perform or to cause to be performed any Service in a volume or quantity or in a manner that materially differs from past practice with respect to such Service during the Lookback Period. Neither Service Provider nor any of its Affiliates shall have any obligation to

replace any Person who is employed or otherwise engaged by any of them to perform the Services upon the termination of such Person's employment with Service Provider or any Affiliate of Service Provider, as the case may be, for whatever reason.

(d) Standard of Performance; Standard of Care.

(i) Service Provider shall, and shall cause its Affiliates or Third-Party Service Providers to, perform the Services and its duties and responsibilities hereunder in good faith, consistent with past practice during the Lookback Period and Prudent Utility Practices. For the duration of the Term, neither Service Provider nor any Affiliate thereof or any Third-Party Service Provider shall take any action or fail to take any action that would reasonably be expected to cause a Lien on any assets or properties of Service Recipient or any of its Affiliates. Notwithstanding anything to the contrary herein, neither Service Provider nor any of its Affiliates, nor any Person acting on its, or any of their, behalf, including any Third-Party Service Provider, shall be liable or held accountable for Damages, any error of judgment or mistake of fact or law or anything that either Service Provider or any of its Affiliates or Third-Party Service Provider does or refrains from doing or any other act or omission, except as solely with respect to a material breach of this Agreement or due to its or their gross negligence, Fraud or willful misconduct in connection with its performance of the Services hereunder to the extent provided in this Agreement (and, without limiting and subject to, the Service Provider Indemnity Cap and the limitations set forth herein).

(ii) Nothing in this Agreement shall require Service Provider or its Affiliates to perform or cause to be performed the Services in a manner that would constitute a violation of applicable Law or violate any contract or the rights of any third party.

(iii) The performance of the Services by Service Provider or any of its Affiliates is contingent on the provision by Service Recipient, and its Subsidiaries, at Service Recipient's sole cost and expense, of information, materials, products and other like items and access rights to or otherwise making available the Project Assets consistent with requirements of this Agreement, including Section 2(h), including Section 2(h)(i), and Section 2(j)(iv).

(e) Prices for Services. Services provided pursuant to this Agreement shall be charged at the prices set forth on Exhibit 2 attached hereto (the "Fee Schedule") and as otherwise provided for in this Agreement without further mark-up of any kind.

(f) Transitional Nature of Services; Changes. Notwithstanding anything to the contrary herein, the Parties hereby acknowledge the transitional nature of the Services and that Service Provider or its Affiliates may make changes from time to time in the manner of performing the Services if (i) Service Provider or its Affiliates are making similar changes in performing similar services for their own Affiliates, and (ii) Service Provider or its Affiliates furnish to Service Recipient, and its Subsidiaries, substantially the same notice (in content and timing) as Service Provider or its Affiliates shall furnish to their own Affiliates respecting such changes.

(g) Representatives. On the Effective Date, Service Provider and Service Recipient each shall designate in writing to the other Party one or more representatives to act as a contact person with respect to all issues relating to the provision of the Services pursuant to this Agreement (the "Representatives").

(h) Cooperation. During the Term, Service Provider and Service Recipient, along with their respective Affiliates, and in the case of Service Recipient, its Subsidiaries, shall use commercially reasonable efforts to cooperate with each other in connection with the performance of the Services hereunder. Such cooperation shall include producing on a timely basis information that is reasonably requested by the other Party with respect to the performance of Services and the transition at the end of the

Term of this Agreement; provided, however, that such cooperation shall not unreasonably disrupt the normal operations of Service Provider, Service Recipient or its Subsidiaries; and provided, further, that if Service Recipient is the Party requesting cooperation, Service Recipient shall pay all reasonable out-of-pocket costs and expenses incurred by Service Provider or any of its Affiliates furnishing such cooperation, unless otherwise expressly provided in this Agreement.

(i) Service Recipient, and its Subsidiaries, shall use commercially reasonable efforts to (A) enable Service Provider, its Affiliates and its Third-Party Service Providers to provide the Services in accordance with this Agreement, (B) provide information, materials, products, documentation and other items sufficient for Service Provider to perform the Services, and (C) make available timely decisions, approvals and acceptances in order for Service Provider to perform its obligations under this Agreement in a timely manner. In the event that Service Recipient or its Subsidiaries fail to provide such information, materials, products or other items in accordance with the preceding sentence, the Representatives of the Parties shall discuss and work together in good faith to resolve any impact such failure may have to the provision of the Services. Any failure by Service Recipient or its Subsidiaries to provide information, materials, products or other items shall relieve Service Provider and its Affiliates of their obligation to provide a Service hereunder solely to the extent the provision of such Service is dependent or otherwise reliant on such information, materials, products and other items but only for so long as the failure to provide such information, materials, products and other items continues.

(ii) Service Provider, and its Affiliates, shall use commercially reasonable efforts to cooperate with Service Recipient and its Subsidiaries and with respect to preparations to operate the Projects at the end of the Term.

(iii) In the event that (A) there is nonperformance of any Service as a result of a Force Majeure Event, (B) the provision of a Service would violate applicable Law or violate any contract or the rights of any third party, or (C) subject to Section 2(k)(k), the provision of a Service requires Consent which has not been obtained, the Parties (1) hereby acknowledge that Service Provider may suspend performance of Service(s) so affected during such period solely to the extent so effected; (2) hereby acknowledge that Service Recipient shall not be obligated to pay any fees in connection with such suspended Services, beginning on the date of any such suspension; and (3) agree to timely work together in good faith (each at its own expense) to arrange for an alternative means by which Service Recipient may obtain the Services so affected, unless otherwise specified under this Agreement. Neither Service Provider nor any of Service Provider's Affiliates shall be required to pay any compensation, consideration or other amount in connection with the provision of Services or any such alternative arrangement, except to the extent that Service Provider's actions or inactions caused or contributed to such violation or the need for such Consent. For the avoidance of doubt, if the sole impediment to providing a Service is the payment of such compensation, consideration or reimbursement, Service Provider shall continue to provide such Service, provided that Service Recipient agrees to reimburse such amounts in Service Recipient's sole discretion.

(i) License to Use Project Assets. Service Recipient hereby grants to Service Provider and its Affiliates and any Third-Party Service Providers a limited, royalty-free, non-transferable, non-exclusive right and license (with no right to sublicense except as expressly provided herein) to use the Project Assets solely to perform the Services set forth on Exhibit 1 attached hereto. Service Provider may grant sublicenses of the foregoing for the benefit of Service Recipient to Service Provider's and Service Recipient's vendors, contractors and subcontractors solely to the extent reasonably necessary for such vendors, contractors and subcontractors to perform Services pursuant to this Agreement. The license set forth in this Section 2(i) and any sublicenses granted pursuant hereto shall terminate with respect to a Service upon the termination of the applicable Service.

(j) Access to Data, Systems, and the Projects.

(i) Notwithstanding anything to the contrary herein, Service Recipient, and its Subsidiaries, shall not, directly or indirectly, with respect to the Services, resell, transfer or assign any such Services to any Person.

(ii) While using any data processing or communications services of Service Provider or its Affiliates or its Third-Party Service Providers in connection with the provision of the Services, Service Recipient shall, and shall direct all of its Subsidiaries to, adhere in all respects to Service Provider's and its Affiliates' and its Third-Party Service Provider's corporate information policies and procedures (including polices with respect to the protection of proprietary information and other policies and procedures regarding the use of computing resources) (the "IS Policies"); provided, that copies of such policies have been provided to Service Recipient. If required by Service Provider or its Affiliates or its Third-Party Service Providers, prior to having access to any such Services, Service Recipient shall cause all of its and its Subsidiaries personnel who will be given such access to execute and deliver to Service Provider confirmation in writing of their agreement to comply with the IS Policies provided to Service Recipient.

(iii) Service Provider and its Affiliates and its Third-Party Service Providers shall have the right to temporarily shut down for maintenance purposes the operation of any computer hardware, software, database or network environment or other systems of Service Provider or its Affiliates or Third-Party Service Providers providing any Service, whenever in its judgment, reasonably exercised in good faith and in a non-discriminatory manner, such action is necessary or advisable for general maintenance or emergency purposes; provided that, Service Provider will use commercially reasonable efforts to schedule non-emergency maintenance after consulting with Service Recipient so as not to materially disrupt the operations of the Projects, including, at Service Recipient's cost and expense, scheduling and conducting such maintenance outside of normal business hours. To the extent practicable, Service Provider will give Service Recipient five (5) Business Days' written notice of any such shutdown.

(iv) Service Recipient and its Subsidiaries hereby grant Service Provider, its Affiliates and any Third-Party Service Provider, a non-exclusive right (which shall not constitute an easement or other restriction on the Projects and which shall be revocable at the end of the Term or upon termination of this Agreement) to enter on the premises on which each Project is located and to occupy and have free access to each Project, to the extent required to execute the Services. Such access shall be provided during normal business hours or at other mutually agreed-upon times, and shall include access to any equipment, systems, or areas required for the Service Provider to complete the Services. Service Recipient agrees to provide any necessary security clearances, passes, or permissions to facilitate such access. Service Provider and its Affiliates and Third-Party Service Providers shall comply with all applicable safety and security policies of the Service Recipient made available to them while accessing a Project.

(v) Each Party shall (and shall cause its Affiliates and each of their personnel receiving Services to): (A) not attempt to obtain access to, use or interfere with (1) any information technology systems of the other Party or its Affiliates (except to the extent access to or use of information technology systems is expressly contemplated as part of the receipt of Services), or (2) any confidential or competitively sensitive information owned, used or processed by the Service Recipient (except to the extent access to or use of confidential or competitively sensitive information is expressly contemplated as part of the receipt of Services and is made subject to customary obligations of confidentiality); (B) maintain reasonable security measures to protect the systems of each Party and its Affiliates to which any Party has access pursuant to this Agreement against access by unauthorized third parties; (C) not disable, damage or erase or disrupt or impair the normal operation of the information technology systems of the other Party or its Affiliates; and (D) promptly notify the other Party of any confirmed misuse, disclosure or loss of, or inability to account for, such Party's confidential or competitively sensitive information, and any confirmed unauthorized access to its or its Affiliates' facilities, systems or network reasonably likely to affect such

Party and will investigate such confirmed security incidents and reasonably cooperate with such Party's incident response team to mitigate and limit the impact of such a security incident.

(k) Third Party Consents. If the use or provision of all or a portion of the Services pursuant to this Agreement requires the approval, consent, permission, waiver or agreement (including any permit) (each a "Consent") of a third party, Service Provider shall use commercially reasonable efforts to obtain such Consents and Service Recipient shall reasonably cooperate and assist Service Provider in connection therewith. If any Consent is not or cannot be obtained, the Parties shall work together in good faith and use their respective commercially reasonable efforts to arrange for a reasonable workaround or alternative reasonable methods of delivering the affected Services in such a manner as to give to Service Recipient the full benefit of such Service to the greatest extent possible. Any costs, fees and expenses in connection with obtaining any Consents or arranging any such workaround or alternative methods of delivering Services shall be borne by Service Recipient.

(l) Additional Services. If, during the term of this Agreement, Service Recipient identifies a service not set forth on Exhibit 1 that is necessary to continue the operation of the Projects in the ordinary course consistent with past practice during the Lookback Period (each such service, an "Additional Service"), then Service Recipient may (at its option), by written notice to the Service Provider, request that the Service Provider provide such Additional Service. Thereafter the Parties shall use commercially reasonable efforts to negotiate an amendment to this Agreement to memorialize the terms for providing (or Service Provider's assistance in procuring the provision of) such Additional Services; provided, however, that in no event shall Service Provider be obligated to provide any Additional Services that would impose an unreasonable burden upon Service Provider or any of its Affiliates as determined in Service Provider's commercially reasonable discretion.

Section 3. Payments to Service Provider.

(a) Payments; Billing. Service Recipient shall pay to Service Provider the undisputed compensation and make reimbursements of all out-of-pocket expenses incurred by Service Provider, provided, that any such expense in excess of $5,000 must be approved in advance by Service Recipient. Invoices for the Services and approved out-of-pocket expenses incurred in connection therewith shall include reasonable detail as to one-time charges and costs in excess of the monthly fee set forth in Exhibit 2. Amounts payable pursuant to this Agreement shall be paid to Service Provider within thirty (30) days of receipt of an invoice from Service Provider.

(b) Late Payments; Disputed Payments. Undisputed amounts not paid within thirty (30) days shall accrue interest from the end of such thirty (30) day period until the date of such payment at a rate equal to five (5) percentage points above the secured overnight financing rate (SOFR), as published by the Wall Street Journal (or other equivalent, widely accepted source of published rates if it no longer publishes such rate), at 12:01 a.m. on the first day of each calendar quarter in which such payments are overdue. In the case of disputed amounts, if it is determined through Section 10 that such amounts are owed, interest shall accrue on the determined amount from the original due date until the date of such payment at the same rate specified above. Notwithstanding the foregoing, if any undisputed payment remains outstanding for more than thirty (30) days after such payment is due, Service Provider reserves the right to suspend performance of the Services until full payment, including accrued interest, is received. Service Provider shall not be liable for any Damages or losses incurred by Service Recipient, or its Subsidiaries, as a result of such suspension of Services.

(c) Tax. The Party receiving payments under this Agreement shall pay any and all Taxes levied on account of all payments it receives from the other Party. Either Party shall deduct or withhold from payments hereunder any Taxes that it is required by applicable Law to deduct or withhold.

Notwithstanding the foregoing, if either Party is entitled under any applicable Tax treaty to a reduction of rate of, or the elimination of, applicable withholding Tax, it may deliver to the other Party or the appropriate Governmental Authority (with the assistance of the other Party to the extent that this is reasonably required and is expressly requested in writing) the prescribed forms necessary to reduce the applicable rate of withholding or to relieve such Party of its obligation to withhold Tax, and such Party withholding shall apply the reduced rate of withholding, or dispense with withholding, as the case may be; provided, that such Party withholding has received evidence, in a form satisfactory to such Party withholding, of such other Party's delivery of all applicable forms (and, if necessary, its receipt of appropriate Governmental Approval) at least fifteen (15) days prior to the time that the payments are due. If, in accordance with the foregoing, the Party withholding withholds any amount, it shall pay to the other Party the balance when due, make timely payment to the proper taxing authority of the withheld amount, and send to such other Party proof of such payments within sixty (60) days following that payment. The Parties shall, and shall cause their respective Affiliates to reasonably cooperate with each other in good faith and provide any information, tax forms, tax certificates and/or documentation reasonably requested from time to time.

(d) Books and Records. Service Provider shall, and shall cause any applicable Affiliates to, preserve and maintain complete and accurate books of account and supporting documentation as necessary (including records, receipts, invoices and reports) to support calculations of the cost of Services for Services rendered by it or its Affiliates as a provider of Services for a period of three (3) years from the applicable Termination Date. Service Provider shall make such books and records reasonably available upon at least two (2) Business Days prior written notice, during ordinary business hours, to Service Recipient.

Section 4. Term and Termination.

(a) Term. The term of this Agreement shall commence on the Effective Date and shall continue for one hundred and twenty (120) days thereafter, unless otherwise terminated pursuant to the terms of this Agreement (the "Term"). This Agreement will terminate with respect to the Services at the close of business on the last day of the Term (unless, prior to such date, the Parties have agreed in writing to an extension of the Term), provided, that Service Recipient may, with thirty (30) days prior written notice, extend this Agreement for one (1) additional term of sixty (60) days and thereafter with the consent of the Service Provider.

(b) Termination for Convenience.

(i) Service Recipient shall have the right, in its sole discretion, to terminate this Agreement prior to the end of the Term upon at least fifteen (15) days' prior written notice. In the event of such a termination, Service Recipient shall pay Service Provider for all Services rendered by Service Provider or of any of its Affiliates prior to the Termination Date.

(ii) Except as otherwise provided in this Agreement, upon not less than five (5) days' prior written notice, Service Recipient shall be entitled to terminate one or more Services, in whole or in part, being rendered by Service Provider, its Affiliates, or any of its Third-Party Service Providers, for any reason or no reason at all.

(iii) Service Provider shall have no right to terminate this Agreement for convenience under this Section 4(b).

(c) Termination for Failure to Provide Services. In the event Service Provider fails to provide a Service as contemplated by this Agreement, and in the event such failure is not cured within fifteen (15) Business Days after receipt of written notice from Service Recipient, Service Recipient may (i) immediately terminate this Agreement in whole or solely with respect to such Service upon written notice to Service

Provider; (ii)(1) engage a third party person to provide Services previously handled by Service Provider at Service Provider's sole cost and expense, and (2) receive from Service Provider, payment of the positive difference, if any, between the cost of purchasing such substitute Service and the amount that would have been paid to Service Provider under the terms of this Agreement for such Service if no Service Provider default with respect to such Service had occurred for the remaining term for such Service.

(d) Partial Termination. Service Recipient may terminate, in whole or in part, the provision of any Service, or any part of such Service, by providing at least thirty (30) days prior written notice to Service Provider. For the avoidance of doubt, (i) Service Recipient shall not be obligated to pay the amounts set forth on Exhibit 2 with respect to any terminated services after such thirty (30) day period and (ii) if any Service is terminated in part, the applicable fee shall be reduced by the cost of such terminated Service.

Section 5. Limitations on Liability for Direct Claims; Service Provider Indemnity Cap; Exclusive Remedy.

(a) In no event shall Service Provider have any liability to Service Recipient or its Affiliates, or any of its or their respective officers, directors, employees, stockholders, agents or representatives, or any of the foregoing Person's respective successors, assigns or heirs of any of the foregoing, for or in connection with (i) any Services provided or to be provided pursuant to this Agreement, or (ii) any actions or inactions in connection with any such Services referred to in the immediately preceding clause (i), in each case, except to the extent that such Person suffers an actual Damage that results from Service Providers' (A) gross negligence, willful misconduct, or Fraud in connection with the Services or (B) breach of any material provision of this Agreement.

(b) Notwithstanding anything contained herein, in no event shall the total aggregate liability of Service Provider or of any of its Affiliates to Service Recipient or any of its Affiliates or to any other Service Recipient Indemnitee in connection with this Agreement exceed three times the aggregate amount of fees received by Service Provider for Services provided hereunder (except to the extent actual Damages arise out of Service Provider's, its Affiliates or any Third-Party Service Provider's Fraud in the performance of the Services) (the "Service Provider Indemnity Cap"). The indemnification provisions set forth in Section 7 and any remedies of Service Recipient pursuant to this Section 5 are further subject to the obligations and limitations set forth in this Agreement.

(c) NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, THE PARTIES AGREE THAT NEITHER PARTY SHALL BE LIABLE FOR SPECIAL, PUNITIVE, CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES (INCLUDING ANY DAMAGES ON ACCOUNT OF LOSS OF REVENUE, LOSS OF PRODUCTION OR OTHER DAMAGES ATTRIBUTABLE TO BUSINESS INTERRUPTION), WHETHER BASED ON CONTRACT, TORT, STRICT LIABILITY, OTHER LAW OR OTHERWISE AND WHETHER OR NOT ARISING FROM THE OTHER PARTY'S SOLE, JOINT OR CONCURRENT NEGLIGENCE, STRICT LIABILITY OR OTHER FAULT OR IN CONNECTION WITH PAYMENTS MADE TO A THIRD PARTY ARISING FROM A THIRD PARTY CLAIM, EXCEPT TO THE EXTENT THAT SUCH DAMAGES ARISE OUT OF SERVICE PROVIDER'S, ITS AFFILIATES, ANY OF THEIR RESPECTIVE REPRESENTATIVES', OR THIRD-PARTY SERVICE PROVIDERS' FRAUD IN THE PERFORMANCE OF THE SERVICES.

(d) Exclusive Remedy. Each Party acknowledges and agrees that, other than in the case of a Party's gross negligence, Fraud, or willful misconduct: (i) the indemnification provisions of Section 7, and (ii) any claims for breach of contract, shall be the sole and exclusive remedies of the Parties, as applicable, for any breach of this Agreement by any other Party or any failure by any other Party to perform or comply with any of its obligations contained in this Agreement.

Section 6. Disclaimer of Warranties. EXCEPT THAT SERVICE PROVIDER SHALL PROVIDE THE SERVICES IN CONFORMITY WITH, AND AS EXPRESSLY SET FORTH IN, THIS AGREEMENT, THE SERVICES PROVIDED HEREUNDER ARE BEING PROVIDED ON AN "AS IS" AND "WITH ALL FAULTS" BASIS WITHOUT ANY GUARANTY, REPRESENTATION OR WARRANTY OF ANY KIND, WHETHER EXPRESS OR IMPLIED (ORAL OR WRITTEN), INCLUDING ANY REPRESENTATION OR WARRANTY IN REGARD TO QUALITY, PERFORMANCE, NON-INFRINGEMENT, COMMERCIAL UTILITY, MERCHANTABILITY OR FITNESS OF THE SERVICES FOR A PARTICULAR PURPOSE, AND SERVICE PROVIDER (ON BEHALF OF ITSELF AND ITS AFFILIATES) HEREBY EXPRESSLY DISCLAIMS ALL SUCH GUARANTIES, REPRESENTATIONS AND WARRANTIES HEREUNDER WITH RESPECT TO THE SERVICES.

Section 7. Indemnity.

(a) Service Recipient shall indemnify, defend and hold harmless Service Provider, each Affiliate of Service Provider and each Third-Party Service Provider, and each of their respective officers, directors, employees, stockholders, agents and representatives, and each of the successors, assigns or heirs of any of the foregoing (collectively, the "Service Provider Indemnitees"), from and against any third party claims relating to, arising out of or resulting from any gross negligence, willful misconduct or Fraud on the part of Service Recipient or its Affiliates in performing its obligations under this Agreement.

(b) Service Provider shall indemnify, defend and hold harmless Service Recipient, each Affiliate of Service Recipient and each of their respective officers, directors, employees, stockholders, agents and representatives, and each of the successors, assigns or heirs of any of the foregoing (collectively, the "Service Recipient Indemnitees") from and against any third party claims relating to, arising out of or resulting from any gross negligence, willful misconduct or Fraud on the part of Service Provider or its Affiliates or Third-Party Service Providers in performing the Services.

(c) The indemnification procedures applicable to this Agreement shall be the same indemnification procedures set forth in Section 9.7 of the Purchase Agreement, *mutatis mutandis*.

Section 8. Force Majeure Event. If the performance of any obligation under this Agreement by either Party is prevented, restricted, interfered with or delayed by reason of any cause beyond the reasonable control of the Party unable to perform, not due to such Party's breach of this Agreement and that could not, with the exercise of due diligence, have been avoided (including without limitation, as a result of acts of God, civil disorders or commotions, acts of aggression, fire, explosions, floods, drought, war, sabotage, embargo, utility failures, material shortages, national labor disturbances, riot, delay or errors by shipping companies, a change in Law, epidemic, pandemic or other similar outbreak or mutation or variant thereof, a national health emergency, or appropriations of property) (any such event, a "Force Majeure Event"), then the Party so affected shall not be excused from such performance, but shall merely suspend such performance during the continuation of such Force Majeure Event; provided, however, that if such performance has been suspended for a period in the aggregate exceeding twelve (12) months, either Party may terminate this Agreement with respect to the affected Services upon written notice to the other Party. The Party prevented from performing its obligations or duties because of the Force Majeure Event shall promptly notify the other Party hereto of the occurrence and particulars of such event and shall provide the other Party, from time to time, with its best estimate of the duration of such Force Majeure Event and with notice of the termination thereof. The affected Party shall provide the other Party, from time to time and upon request, updates regarding the Force Majeure Event and details regarding efforts and steps being taken to resolve the Force Majeure Event. The affected Party shall use its commercially reasonable efforts to avoid or remove such causes of nonperformance and to ameliorate the effects of such nonperformance as promptly as practicable thereafter and upon termination of all applicable Force Majeure Events, the

performance of any suspended obligation or duty shall promptly recommence. When a Force Majeure Event arises, the Parties shall discuss what, if any, modification of this Agreement may be required in order to arrive at an equitable solution. In addition to the general exclusion of certain Damages in Section 5, neither Party shall be liable to the other Party for any direct or other Damages arising out of or relating to the suspension or termination of any of its obligations or duties under this Agreement by reason of the occurrence of a Force Majeure Event. Notwithstanding anything to the contrary contained in this Agreement, this Section 8 shall not apply to Service Recipient's payment obligations under this Agreement.

Section 9. Confidentiality. From and after the Closing Date, the Parties shall maintain as confidential and shall not disclose (except for those Representatives, employees, attorneys, accountants and other advisors of the recipient and its Affiliates, including, in the case of the Service Recipient, any future provider of services at the Projects, who need to know such information in connection with the recipient's performance of its obligations under this Agreement or future provision of services at the Projects, as applicable, and have in turn been advised of the confidentiality obligation hereunder), copy or use for purposes other than the performance of this Agreement, any information that relates to the other Party's business affairs, trade secrets, technology, research and development, or this Agreement or any information disclosed to it for the purpose of carrying out this Agreement or otherwise accessible to it during the performance of its obligations hereunder ("Confidential Information"). Confidential Information includes not only written or other tangible information, but also information transferred orally, visually, electronically or by other means, as well as all information relating to the Service Recipient or its business generated by Service Provider through delivery of the Services and shall be treated as information disclosed by the Service Recipient to Service Provider for purposes of this Section 9. In the event that such disclosure, availability, release or filing of Confidential Information is required by law, to the extent permissible, each Party shall (i) in advance of any such disclosure, notify the other Party of the information it proposes to disclose, it being understood that only that information which is required to be disclosed in order to comply with applicable law shall be disclosed, and (ii) use its commercially reasonable efforts (a) to obtain "confidential treatment" or similar treatment of this Agreement, and (b) to redact such terms of this Agreement that the other Party shall reasonably request.

Section 10. Miscellaneous.

(a) Disputes. In the event that a dispute shall arise between the Parties relating to the interpretation or operation of this Agreement, prior to instituting any action, senior officers of each Party shall meet promptly and shall act in good faith to attempt to resolve such dispute. If such senior officers cannot resolve the dispute within five (5) Business Days, either Party may institute any other remedy available at law or in equity, unless limited by Section 5 or Section 6.

(b) Survival. The provisions of Section 4¸ Section 9 and Section 10 shall survive the expiration or termination of this Agreement.

(c) No Third Party Beneficiaries. Except as provided in Section 7, the provisions of this Agreement are solely for the benefit of the Parties hereto and their successors and permitted assigns. Nothing in this Agreement, express or implied, shall give or be construed to give any Person, including the Subsidiaries, any rights or remedies of any nature whatsoever under or by reason of this Agreement, except the Parties hereto and such successors and assigns, any rights or remedies hereunder.

(d) No Agency. Service Provider and Service Recipient each acknowledge that the Parties are separate entities, each of which has entered into this Agreement for independent business reasons. The relationships of Service Provider and its Affiliates, on the one hand, to Service Recipient and its Affiliates, on the other hand, hereunder are those of independent contractors and nothing contained herein shall be deemed to create a joint venture, partnership, employment, agency or any other relationship. In its provision

of the Services, Service Provider shall act under this Agreement solely as an independent contractor and not as an agent, employee or partner of Service Recipient.

(e) Interpretation.

(i) Terms defined in the singular shall have a comparable meaning when used in the plural, and vice versa. Whenever the context may require, any noun or pronoun shall be deemed to include (a) the plural as well as the singular and (b) any corresponding masculine, feminine and neuter forms.

(ii) As used in this Agreement, (a) the words "hereof", "herein", "hereto" and "hereunder" and words of similar import shall refer to this Agreement as a whole and not to any particular provision of this Agreement, (b) the word "including", and words of similar import, shall mean "including, but not limited to" and "including, without limitation", (c) the terms "dollars" and "$" shall mean United States Dollars, the lawful currency of the United States of America, (d) the word "will" shall be construed to have the same meaning and effect as the word "shall", (e) the word "or" is not exclusive, (f) the word "extent" in the phrase "to the extent" shall mean the degree to which a subject or other thing extends, and such phrase shall not mean simply "if," (g) the words "asset" and "property" shall be construed to have the same meaning and effect and (h) references to a Person are also to its permitted successors and assigns.

(iii) References to "Sections" or "Exhibits" shall mean the Sections of, or the Exhibits to, this Agreement, as the case may be, except as may be otherwise specified. All terms defined in this Agreement shall have their defined meanings when used in any Exhibit to this Agreement or any certificate or other document made or delivered pursuant hereto, unless otherwise defined therein.

(iv) Except as otherwise specifically provided in this Agreement, any agreement, instrument or statute defined or referred to herein means such agreement, instrument or statute as from time to time amended, supplemented or modified, including (a) (in the case of agreements or instruments) by waiver or consent and (in the case of statutes) by succession of comparable successor statutes and (b) all attachments thereto and instruments incorporated therein.

(v) Any reference to any federal, state, local or foreign Law shall be deemed also to refer to all rules and regulations promulgated thereunder, unless the context requires otherwise.

(vi) Any accounting term set forth herein and not otherwise defined shall have the meaning accorded it under GAAP as applied on a consistent basis by Service Provider. For the avoidance of doubt, in the event of any discrepancy between GAAP and the provisions of this Agreement, the provisions of this Agreement shall control.

(vii) The Parties hereto have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any of the provisions of this Agreement.

(f) Amendments. This Agreement may not be amended except by an instrument in writing signed on behalf of each of the Parties hereto. By an instrument in writing, Service Recipient, on the one hand, or Service Provider, on the other hand, may waive compliance by the other with any term or provision of this Agreement that such other Party was or is obligated to comply with or perform. Any such waiver shall only be effective in the specific instance and for the specific and limited purpose for which it was given and shall not be deemed a waiver of any other provision of this Agreement or of the same breach or default upon any recurrence thereof. No failure on the part of any Party to exercise and no delay in

exercising any right hereunder shall operate as a waiver thereof nor shall any single or partial exercise of any right hereunder preclude any other or further exercise thereof or the exercise of any other right.

(g) Notices. All notices and other communications given or made pursuant hereto shall be in writing and shall be deemed to have been duly given or made (i) as of the date received, if delivered personally, (ii) as of the date noted as delivered on the receipt, if delivered through any nationally known overnight delivery service for next Day delivery, or (iii) upon acknowledgement by the intended recipient, if emailed, to the Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 10(g)):

If to Service Provider or any of its Affiliates:

Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201
Attn: Ben Rainwater
Ben.Rainwater@cmsenergy.com

with copies to:

Consumers Energy Company
One Energy Plaza
Jackson, Michigan 49201
Attn: Robert Beach
Robert.Beach@cmsenergy.com

Troutman Pepper Locke, LLP
401 9th Street, N.W.
Suite 1000
Washington, D.C. 20004
Attn: Todd Coles, Esq.
Email: Todd.Coles@Troutman.com

If to Service Recipient or any of its Subsidiaries:

Confluence Hydro, LLC
c/o Hull Street Energy, LLC
4747 Bethesda Avenue, Suite 1220
Bethesda, MD 20814
Attn: Legal Department
Email: Legal@hullstreetenergy.com

with a copy to:

McGuireWoods LLP
500 E. Pratt Street, Suite 1000
Baltimore, MD 21202
Attn: Brian Kelly
Email: bkelly@mcguirewoods.com

(h) Assignment. This Agreement and the rights and obligations hereunder shall not be assignable or otherwise transferable by Service Recipient or Service Provider (including by operation of Law in connection with a merger, consolidation or sale of all or substantially all the assets of Service Recipient or Service Provider) without the prior written consent of the other Party hereto; provided, that a Party may, with notice to the other Party, assign its rights and obligations hereunder to any Affiliate of either Party without the consent of the other Party; provided, that no such assignment to an Affiliate shall release such Party from any obligation or liability and such assigning Party shall remain primarily liable and responsible for all of its obligations under this Agreement. Any attempted assignment in violation of this Section 10(h) shall be null and void.

(i) Entire Agreement. This Agreement (including the Exhibits attached hereto), and the Purchase Agreement comprise the entire agreement between the Parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral or written, with respect to such matters, which will remain in full force and effect for the term provided for therein and any other written agreement of the Parties that expressly provides that it is not superseded by this Agreement.

(j) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which shall constitute one and the same agreement. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic means (including DocuSign) shall be effective as delivery of a manually executed counterpart of this Agreement.

(k) Severability. The provisions of this Agreement shall be deemed severable and the invalidity or unenforceability of any provision shall not affect the validity or enforceability of the other provisions hereof. If any provision of this Agreement, or the application thereof to any Person or any circumstance, is invalid or unenforceable, (i) a suitable and equitable provision shall be substituted therefor in order to carry out, so far as may be valid and enforceable, the intent and purpose of such invalid or unenforceable provision, and (ii) the remainder of this Agreement and the application of such provision to other Persons or circumstances shall not be affected by such invalidity or unenforceability, nor shall such invalidity or unenforceability affect the validity or enforceability of such provision, or the application thereof in any other jurisdiction.

(l) Governing Law; Jurisdiction, Waiver of Jury Trial. The governing law, jurisdiction, and waiver of jury trial provisions applicable to this Agreement shall be the same governing law, jurisdiction and waiver of jury trial provisions set forth in Section 13.5 of the Purchase Agreement, *mutatis mutandis*.

(m) Non-Recourse. No past, present or future director, officer, employee, incorporator, member, partner, stockholder, Affiliate, agent, attorney or Representative of either Party or its Affiliates shall have any liability for any obligations or liabilities of such Party under this Agreement, for any claim made under this Agreement, or in connection with the Services provided hereunder.

(n) Actions to be Taken by Affiliates. Each Party shall cause each of its Affiliates or Subsidiaries (as applicable) to take all actions required or contemplated to be taken pursuant to this Agreement.

[*Signature Page Follows*]

Service Provider and Service Recipient have duly executed this Agreement as of the Effective Date.

CONSUMERS ENERGY COMPANY
a Michigan Corporation

By:
Name:
Title:

CONFLUENCE HYDRO, LLC
a Delaware Limited Liability Company

By: _____
Name:
Title:

REDACTED

Exhibit 1
Services

Exhibit 2
Fee Schedule

EXHIBIT Q

METC Easements

[Attached.]

AuSable River

Mio

7-B27-4, 9-B27-6, 10-B27-7, Line 318A A strip of land 150 feet in width being 75 feet on each side of the centerline of an existing electric transmission line located in the Southwest 1/4 of Section 3, T26N, R2E, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the Southwest corner of said Section 3, thence South 89°54'48" East along the South line of said Section 3, a distance of 1336.43 feet to the West 1/8th line of said Section 3, thence North 00°27'02" East along the said West 1/8th line, a distance of 507.15 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following three courses: North 43° 40'25" West 1717.32 feet, thence North 00°40'09" East 841.80 feet, thence North 01°01'44" West 50.55 feet to the East & West 1/4 line of said Section 3 for a point of ending of this centerline description. The sidelines of said 150 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the West 1/8th line of said Section 3 and to terminate at the East & West 1/4 line of said Section 3.

5-B27-5, 6-B27-6, 7-B27-4, 19-B27-3, 25-B27-7, 26-B27-1, 32-B27-2, 33-B27 – 2 Line 85B A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Southeast 1/4 of Section 3, T26N, R2E, and the Southwest 1/4 of Section 2, T26N, R2E, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the East 1/4 corner of Section 3, thence South 89°55'58" West along the East & West 1/4 line of said Section 3, a distance of 1390.64 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following five courses: South 00°26'08" East 1685.69 feet, thence North 89°58'35" East 1101.94 feet, thence North 83°19'54" East 2070.59 feet, thence North 89° 52'24" East 544.68 feet, thence South 31°54'29" East 452.10 feet to the point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the East & West 1/4 line of said Section 3 and to terminate at a line, said line being described as follows: To find the place of beginning, commence at the center of Section 2, T26N, R2E; thence S 00° 13' 01" E, 1811.00 feet, along the North and South 1/4 line of said section to the place of beginning of said line; thence S 89° 43' 03" E, to the Easterly bank of the Mio Pond on the AuSable River.

Also, a strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Northeast 1/4 of Section 11, T26N, R2E, and the Northwest 1/4 of Section 12, T26N, R2E, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the Northeast 1/4 corner of said Section 11; thence North 89°49'54" West along North line of said Section 11, a distance of 2246.33 feet to the centerline of an existing electric transmission line and the Point of Beginning of this centerline description; thence along said centerline the following four courses: South 31°54'29" East 584.93 feet, thence North 89°00'16" East 1937.65 feet to a point on the East line of said Section 11 which is South 00°01'31" East along the Section line 456.29 feet of the Northeast 1/4 corner of said Section 11; thence North 89°00'16" East 1156.82 feet, thence South 69°26'41" East 1595.41 feet, to the North & South 1/4 line of said Section 12 for a point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the North line of said Section 11 and to terminate at the North & South 1/4 line of said Section 12.

Also, a strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Northeast 1/4 of Section 12, T26N, R2E, the centerline of said strip being more particularly described as follows: To find the Point of Beginning, commence at the Northeast corner to Section 12 T26N, R2E, thence South 00°21'07" East along the East line of said Section 12, a distance 1317.52 feet to the North 1/8th line of said Section 12, thence South 89°39'31" West a distance of 1804.57 feet to the centerline of an existing electric transmission line and the Point of Beginning of this centerline description; thence along said centerline the following two courses: South 69°26'41" East 451.55 feet, thence South 82° 44'07" East 1060.81 feet to the perimeter of the Mio parcel described below (being tract 32-B27-2, Mio Parcel) for a point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the North 1/8th line of said Section 12 and to terminate at the perimeter of the aforesaid Mio Parcel.

Parcels: 001-303-011-00, 001-302-072-00, 001-311-001-00, 001-312-021-00, 001-312-019-00

Alcona

9-B3-1 Line 5A A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Northeast 1/4 of Section 4, T25N, R5E, Curtis Township, Alcona County, Michigan, the centerline of said strip being more particularly described as follows: To find the Point of Beginning, commence at the Northeast corner of said Section 4, thence South 89°46'00" West along the north line of said Section 4, a distance of 526.61 feet to the centerline of an existing electric transmission line and the Point of Beginning of this centerline description; thence along said centerline: South 51°54'53" E 383.58 feet to the centerline of the AuSable River for a Point of Ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the North line of said Section 4 and to terminate at the centerline of the AuSable River.

38-B3-7, 39-B3-3 Lines 5A/5B A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in Northwest 1/4 of Section 14, T25N, R5E, Curtis Township, Alcona County, said strip being more particularly described as follows: To find the Point of Beginning, commence at the West 1/4 corner of said Section 14, thence N 55° 09' 41" E, a distance of 1013.99 feet; thence N 86° 26' 55" E a distance of 117.88 feet to the centerline of an existing electric transmission line at the center of a substation rack and the Point of Beginning of this centerline description; thence along said centerline the following three courses: S 68° 52' 32" E 164.65 feet and N 86° 25' 36" E 424.32 feet and N 86° 08' 00" E 191.09 feet to the centerline of Bamfield Road and the Point of Ending of the centerline description. The sidelines of said 72-foot wide strip of land are to be extended or shortened to meet at the angle points, said sidelines to begin at the perimeter of the substation rack and to terminate at the centerline of Bamfield Road.

Note: It is understood that a portion of the above-described strip of land lies within the fenced premises of Consumers' Alcona Substation, in the NW1/4 of Section 14, T25N, R5E. It is also understood that an electric line, which is part of METC's Transmission Facilities covered by this Agreement and is located on said strip of land, presently connects to the substation within said fenced area; but that no part of the substation itself, or its associated structures and facilities, is part of METC's Transmission Facilities covered by this Agreement. With respect to that portion of the above-described strip of land that is within said substation fence (as now or hereafter existing), it is expressly understood, any other provision of this Agreement notwithstanding, that unless otherwise expressly approved in writing by Consumers, METC shall make no entry thereon and shall have no right to authorize others to enter thereon; and METC shall make separate arrangements and agreements with Consumers regarding the performance of any work on the portion of METC's Transmission Facilities located therein.

Parcels: 030-004-100-005-00, 030-004-100-010-00, 030-014-100-00

Loud

12-B24-4, Line 5L A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Southwest 1/4 of the Southeast 1/4 and the South 1/2 of the Southwest 1/4 of Section 19, T24N, R6E, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the Southeast corner of said Section 19, thence South 89°22'42" West along the South line of said section, a distance of 1313.08 feet to the East 1/8 line, thence North 00° 56'38" East 77.64 feet to the center line of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following five courses: South 89°28'46" West 827.17 feet to the center line of Highway M-65, thence continuing South 89°28'46" West 357.21 feet, thence South 89°32'34" West 129.21 feet (to a point which lies North 00°31'59" East 80.09 feet from the South 1/4 corner of said Section 19), thence continuing South 89°32'34" West 2073.51 feet, thence South 53°40'50" West 150.46 feet to the South line of said Section 19 for a point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the East 1/8 line of said Section 19 and to terminate at the South line of said Section 19.

18-B24-2, 20-B24-2, 21-B24-2 Lines 5B and 5L A strip of land 72 feet in width, being 36 feet on each side of the centerline of an existing electric Transmission line located in the Northwest 1/4 of Section 21, T24N, R6E, the centerline of said strip of land being more particularly described as follows: To find the point of beginning of this centerline description, commence at the Northwest corner of said Section 21; thence N 87°38'13" E, along the North line of said section, 1636.11 feet to the centerline of an existing electric Transmission line and the point of beginning of this centerline description; thence along the centerline of said existing electric Transmission line following seven courses: S 25°52'22" E 235.05 feet, thence S 00°22'14" E 471.65 feet, thence S 00°01'55" E 468.37 feet, thence S 40°57'04" W 533.83 feet, thence S 10°53'29" W 183.08 feet, thence S 39°12'16" W 570.54 feet, and thence S 46°15'36" W 738.51 feet, to a point on the East-West 1/4 line of said section which is located 458.20 feet N 87°44'36" E along said East-West 1/4 line from the West 1/4 corner of said section, said point being the point of ending of this centerline description. The sidelines of said 72-foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the North line of said Section 21 and to terminate on the East-West 1/4 line of said section.

Parcels: 06001920000100, 06002120000100

Five Channels – N/A

Cooke – N/A

Foote

**12-B24-4 is located in Section 19, T24N/R6E, part of Loud Hydro System. Remaining Tracts are correct for this 138kV route

12-B24-4, 17-B16-1, 18-B16-2, 19-B16-3, 20-B16-4, Line 103E A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the Southwest 1/4 of Section 19 and the West 1/2 of Section 30, T24N, R8E, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the West 1/4 Corner of said Section 19, thence South 00°41'00" West, along the West line of said Section, a distance of 178.62 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following five courses: South 27°01'00" East, 1927 feet; South 43°47'00" East, 1469 feet; South 13°13'00" West, 1803 feet; South 76°43'00" West, 494 feet; South 01°17'00" East, 422 feet to an existing substation rack (Iosco Sub) and the point of ending of this centerline description. Excepting therefrom that portion lying West of the West line of a 251 foot wide strip of land as described in a Warranty Deed recorded in Liber 347, Page 68, Iosco County Records and North of the North line of the South 300 feet of the Northwest 1/4 of said Section 30. The sidelines of said 72-foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the West line of said Section 19 and to terminate at the aforesaid substation rack.

Note: It is understood that a portion of the above-described strip of land lies within the fenced premises of Consumers' Iosco Substation, in the Southwest 1/4 of Section 30, T24N, R8E. It is also understood that an electric line, which is part of METC's Transmission Facilities covered by this Agreement and is located on said strip of land, presently connects to the substation within said fenced area; but that no part of the substation itself, or its associated structures and facilities, is part of METC's Transmission Facilities covered by this Agreement. With respect to that portion of the above-described strip of land that is within said substation fence (as now or hereafter existing), it is expressly understood, any other provision of this Agreement notwithstanding, that unless otherwise expressly approved in writing by Consumers, METC shall make no entry thereon and shall have no right to authorize others to enter thereon; and METC shall make separate arrangements and agreements with Consumers regarding the performance of any work on the portion of METC's Transmission Facilities located therein.

1-E57-3, 20-B16-4 A parcel of land in the NW 1/4 of the SW 1/4 and the SW 1/4 of the NW 1/4 of Section 30, T24N, R8E, Oscoda Township, described as follows: To find the Point of Beginning of this description, commence at the West 1/4 corner of said Section 30; thence East, along the E-W 1/4 line of said section, 1054.33 feet to a point which is 5.71 feet North of the existing Northerly fence line of the Iosco Substation and 5.00 feet West of a proposed new fence line, said point being the Point of Beginning of this description; thence N 00°28'09" E, parallel to and 5 feet exterior of said proposed new substation fence, 15.73 feet; thence S 89°31'51" E, parallel to and 5 feet exterior of said proposed new substation fence, 71.88 feet; thence S 00°10'05" W, parallel with and 5 feet exterior of said proposed new substation fence and the existing substation fence, 164.65 feet; thence N 89°37'42" W 72.75 feet; thence N 00°28'09" E 149.04 feet to the Point of Beginning. EXCEPTING THEREFROM any part thereof that may lie within "Exception Strip No. 2" as described in Item "A." above.

Parcels: 06201930000100, 06203020000100, 06203030000200

Grand River

Webber – N/A

Kalamazoo River

Allegan/Calkins – N/A

Manistee River

Hodenpyl

96-B20-7, 98-B20-1, 99-B20-1, Line 90A A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the South 1/2 of Section 24 and the Northwest 1/4 of the Northeast 1/4 of Section 25, all in T23N, R13W, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the East 1/4 corner of said Section 25, thence North 87°34'07" West, along the East-West 1/4 line of said Section, 1307.38 feet to the East 1/8 line of said Section; thence North 01°40'15" East, along said East 1/8 line 1311.04 feet to the North 1/8 line of said Section; thence North 87°38'58" West along said North 1/8 line 486.06 feet to the center line of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following two courses: North 11°39'29" East, 3799.61 feet and North 26°06'11" East, 181.87 feet to the East-West 1/4 line of said Section 24 and the point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the North 1/8 line of said Section 25 and to terminate at the East-West 1/4 line of said Section 24, except any part of said strip located in the Northwest 1/4 of the Southeast 1/4 of said Section 24.

100-B20-2, Line 1A
The Southeast 1/4 of the Northeast 1/4 of Section 25, Town 23 North, Range 13 West, Marilla Township, Manistee County, Michigan, EXCEPT the following described parcel of land: Commence at the East 1/4 post of said Section; thence North 01°56'20" West along the East line of said Section 272.7 feet to the place of beginning of this exception description; thence continuing North 01°56'20" West along said East line of said Section 252.54 feet; thence South 86°52'50" West, 54.09 feet; thence South 14°04'40" East, 257.17 feet to the place of beginning.

Parcels: 09-024-375-01, 09-025-100-01

91-B20-3, Line 1A
A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric line, known as line segment 1A, as currently located and running in a Northeasterly and Southwesterly direction to the center of the Substation Rack, across a parcel of land described as: Land in the Township of Springville, County of Wexford and State of Michigan described as: The Northwest 1/4 of the Northwest 1/4 of Section 30, Town 23 North, Range 12 West.

ote: It is understood that a portion of the above-described strip of land lies within the fenced premises of Consumers Hodenpyl Substation, in the Northwest 1/4 of Section 30, Town 23 North, Range 12 West. It is also understood that an electric line, which is part of METC's Transmission Facilities covered by this Agreement and is located on said strip of land, presently connects o the substation within said fenced area; but that no part of the substation itself, or its associated structures and facilities is part of METC's Transmission Facilities covered by this Agreement. With respect to that potion of the above-described strip of land that is within said substation fence (as now or hereafter existing), it is expressly understood$_1$ any other provision of this Agreement notwithstanding, that unless otherwise expressly approved in writing by Consumers, METC shall make no entry thereon and shall have no right to authorize others to enter thereon; and METC shall make separate arrangements and agreements with Consumers regarding the performance of any work on the portion of METC's Transmission Facilities located therein.

90-B20-3, Line lA
A strip of land 72 feet in width being 36 feet on each side of the centerline of an ex:isting electric line, known as line segment lA, as currently located and running in a Northeasterly and Southwesterly direction to the center of the Substation Rack, across a parcel of land described as: Land in the Township of Springville, County of Wexford and State of Michigan described as: The South 1/2 of the Northwest l/4 of Section 30, Town 23 North, Range 12 west; Except a parcel of land in the Southwest 1/4 of the Northwest 1/4 of Section 30, Town 23 North, Range 12 West, described as follows; to find the place of beginning of this description commence at the West 1/4 post of said section, thence North 01°56'20" West along the West line of said section 55 feet; thence North 86°52'50" East, 192.4 feet to the place of beginning of this description; thence continuing North 86°52'50µ East parallel with the East and West 1/4 line of said section 170 feet; thence North 03°07'10" West, 316 feet to a point on a curve not being tangen·; thence on a bearing of North 76°57'10" West a distance of 177.05 feet, said course and distance being the chord bearing and distance of a 13°30' curve to the right, length along the curve being 178.35 feet, said curve bearing a radius of 425.58 feet; thence South 03°07'10n East, 365.21 feet to the place of beginning; ALSO EXCEPT a parcel of land in the Southwest 1/4 of the Northwest 1/4 of Section 30, Town 23 North, Range 12 West, Springville Township, Wex:ford County, described as follows; to find the place of beginning of this description commence at the West l/4 post of said section; thence North 01°56'20'' West along the West line of said section 55 feet; thence North 86°52'50" East pa allel with the East and Wes 1/4 line of said section 192.4 feet to the place of beginning of this description; thence North 03°07'10'' West 365.21 feet to a point on a curve not being tangent; thence on a bearing of North 53°44'30" West, a distance of 165.41 feet, said course and distance being the chord bearing and distance of 13°30'00llcurve to the right, length along the curve being 166.47 feet, said curve bearing a radius of 425.58 feet; thence South 86°52'50" West. 54.65 feet to the West lines of said section; thence South 01°56'20" East along the West line of said section 252.54 feet to a point which said point is 272.7 feet Northerly of the Wes 1/4 post of said section as measured along the West line of said section; thence South 14°04'40" East, 153.83 feet; thence South 46°21'40" East, 91.46 feet, thence North 86°52'50" Eas parallel with the East and West l/4 line of said section 96 feet to the place of beginning.

Note: It is understood that a portion of the above-described strip of land lies within the fenced premises of Consumers Hodenpyl Substation, in the Northwest 1/4 of Section 30, Town 23 North, Range 12 West. It is also understood that an electric line, which is part of METC's Transmission Facilities covered by this Agreement and is located on said strip of land, presently connects to the substation within said fenced area; but that no part of the substation itself, or its associated structures and facilities is part of METC's Transmission Facilities covered by this Agreement. With respect to that portion of the above-described strip of land that is within said substation fence (as now or hereafter existing), it is expressly understood, any other provision of this Agreement notwithstanding, that unless otherwise expressly approved in writing by Consumers, METC shall make no entry thereon and shall have no right to authorize others to enter thereon; and METC shall make separate arrangements and agreements with Consumers regarding the performance of any work on the portion of METC's Transmission Facilities located therein.

Parcel: 2312-30-1101

Tippy

89-B39-6 Line 1B A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in part of the Southwest 1/4 of Section 5, T21N, R13W, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the West 1/4 corner of said Section 5; thence South 88°17'25" East, along the East and West 1/4 line of said Section 5, 199.58 feet to the point of beginning of this centerline description; thence South 06°16'46" East, along an existing electrical transmission line, 2007.64 feet, more or less, to a point on the North line of the South 1/4 of said Southwest 1/4 of Section 5 and to the point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to begin at the East-West 1/4 line of said Section 5 and to terminate at said North line of the South 1/4 of Southwest 1/4 of Section 5.

89-B39-6, Line 1C A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in part of the Southwest 1/4 of Section 5, T21N, R13W, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the West 1/4 corner of said Section 5; thence South 88°17'25" East, along the East and West 1/4 line of said Section 5, 257.87 feet to the point of beginning of this centerline description; thence South 06°15'13" East, along an existing electrical transmission line, 2007.44 feet, more or less, to a point on the North line of the South 1/4 of said Southwest 1/4 of Section 5 and to the point of ending of said easement centerline. The sidelines of said 72 foot wide strip of land are to be extended or shortened to begin at the East-West 1/4 line of said Section 5 and to terminate at said North line of the South 1/4 of Southwest 1/4 of Section 5.

Parcel: 10-005-325-00

48-B39-1, 50-B39-2: A strip of land 72 feet in width, being 36 feet on each side of the centerline of an existing electric transmission line located in part of the Northwest 1/4 of the Southwest 1/4, and in part of the Northwest 1/4, of Section 31, T22N, R13W, the centerline of said strip being more particularly described as follows: To find the Point of Beginning, commence at the Southwest corner of said Section 31; thence North 00°53'34" East (previously recorded as North 00°12'38" West) along the West line of said Section 31, 1330.39 feet; thence North 53°45'33" East, 147.91 feet to a point which is 5.00 feet exterior of and perpendicular to the North and West sides of an existing electrical substation fence; thence South 88°06'51" East, 40.04 feet, 5.00 feet exterior of and parallel with the North line of an existing electrical substation fence, to the Point of Beginning of this centerline description; thence along an existing electric transmission line the following six courses: North 06°48'37" East, 235.14 feet; North 02°22'49" East, 243.28 feet; North 01°57'57" East, 1058.46 feet; North 00°07'33" West, 911.75 feet; North 44°44'58" East, 921.43 feet; and North 88°49'58" East, 1944.83 feet, more or less, to a point on the North-South 1/4 line of said Section 31 and the Point of Ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at a point which is 5.00 feet exterior of and perpendicular to said substation fence and to terminate at said North-South 1/4 line.

1-E179-3, 50-B39-2, A parcel of land located in part of the Southwest 1/4 of Section 31, T22N, R13W, said parcel of land being more particularly described as follows: To find the Point of Beginning, commence at the Southwest corner of said Section 31; thence North 00°53'34" East, (previously recorded as North 00°12'38" West) along the West line of said Section 31, 1330.39 feet; thence North 53°45'33" East, 147.91 feet to the point of beginning; thence running 5.00 feet from, parallel with, and outside of an existing electric substation fence the following four courses: South 88°06'51" East, 224.85 feet; South 01°28'17" West, 182.42 feet; North 88°13'20" West, 226.04 feet; North 01°50'41" East, along the West line of said substation fence, 182.84 feet to the point of beginning.

Also, an easement for ingress and egress located in part of the Southwest 1/4 of Section 31, T22N, R13W, said easement being more particularly described as follows: To find the Point of Beginning, commence at the Southwest corner of said Section 31;thence North 00°53'34" East, (previously recorded as North 00°12'38" West) along the West line of said Section 31, 1330.39 feet; thence North 53°45'33" East, 147.91 feet, thence South 88°06'51" East, 16.95 feet, 5.00 feet from, parallel with, and outside of an existing electrical substation fence, to a point on the Southerly right-of-way line of an existing County Road known as Tippy Dam Road and the point of beginning of this easement description; thence continuing South 88°06'51" East, 5.00 feet exterior of and parallel with said substation fence, 8.05 feet; thence North 01°50'14" East, 1.81 feet to a point on said Southerly right-of-way line; thence South 79°10'51" West, along said Southerly right-of-way line, 8.25 feet to the point of beginning.

1-E179-3, 51-B39-2, A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in part of the Southwest 1/4 and in part of the Southeast 1/4 of Section 31, T22N, R13W, the centerline of said strip being more particularly described as follows: To find the Point of Beginning, commence at the Southwest corner of said Section 31; thence North 00°53'34" East, (previously recorded as North 00°12'38" West) along the West line of said Section 31, 1330.39 feet; thence North 53°45'33" East, 147.91 feet; thence 5.00 feet exterior of and parallel with an existing electrical substation fence the following two courses: South 88°06'51" East, 224.85 feet; South 01°28'17" West, 113.80 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence, along said centerline the following three courses: South 81°48'20" East, 229.73 feet; South 89°16'38" East, 683.35 feet; and South 60°43'07" East, 2940.84 feet, more or less, to a point on the South line of said Section 31 and the point of ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at a point which is 5.00 feet exterior of and perpendicular to said existing electrical substation fence and to terminate at said South line of Section 31.

1-E179-3, 50-B39-2, 51-B39-2 A strip of land 72 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in part of the Southwest 1/4 and in part of the Southeast 1/4 of Section 31, T22N., R13W, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the Southwest corner of said Section 31; thence North 00°53'34" East, (previously recorded as North 00°12'38" West) along the West line of said Section 31, 1330.39 feet; thence North 53°45'33" East, 147.91 feet, thence 5.00 feet exterior of and parallel with an existing electrical substation fence the following two courses: South 88°06'51" East, 224.85 feet; South 01°28'17" West, 74.77 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence, along an existing electrical transmission line, the following three courses: South 87°54'17" East, 217.08 feet; South 88°12'24" East, 720.51 feet; and South 60°43'34" East, 3055.29 feet, more or less, to a point on the South line of said Section 31 and the Point of Ending of this centerline description. The sidelines of said 72 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at a point which is 5.00 feet exterior of and perpendicular to said electrical substation fence and to terminate at said South line of Section 31.

Parcels: 05-031-225-01, 05-031-100-01

Muskegon River

Croton

27-B14-8, 28-B14-8, 61-B14-1*, 62-B14-2*, 63-B14-3*, 66-B14-1*, 210.1-D1-5*, Line 1G A strip of Land being 72.0 feet in width being 36 feet on each side of the centerline of an existing electric transmission Line located in the NE 1/4 of Section 18 and the SE 1/4 of Section 7, all in T12N, R11W, Croton Township, Newaygo County, Michigan the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the North 1/4 corner of said Section 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section 18; thence S 01°01'13" E 344.07 feet along the West line of Government Lot 1 of said Section 18; thence N 88°58'47" E 139.35 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following 4 courses: N 00°06'19" W 159.45 feet and N 30°04'57" W 1967.45 feet and N 30°03'09" W 461.63 feet and N 27°46'42" W 501 feet more or less to the N-S 1/4 line of said Section 7 and the point of ending of the centerline description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the Croton Substation Site described below and to terminate at the N-S 1/4 line of said Section 7.

27-B14-8, 28-B14-8, 61-B14-1*, 62-B14-2*, 63-B14-3*, 66-B14-1*, Line 2A A strip of Land being 72.0 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the NE 1/4 of Section 18 and the SE 1/4 of Section 7, all in T12N, R11W, Croton Township, Newaygo County, Michigan, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the North 1/4 corner of said Section 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section 18; thence S 01°01'13" E 368.22 feet along the West line of Government Lot 1 of said Section 18; thence N 88°58'47" E 406.87 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following 3 courses: N 00°34'56" W 178.97 feet and N 35°07'07" W 1882.42 feet and N 28°52'36" W 1313 feet more or less to the N-S 1/4 line of said Section 7 and the point of ending of this centerline description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the Croton Substation Site described below and terminate at the N-S 1/4 line of said Section 7.

Parcels: 20-07-100-003 (not split correctly on GIS, NW ¼ sold by CE, SE ¼ still owned by CE)
20-07-451-001, 20-07-460-001, 20-07-470-001, 20-07-461-001, 20-07-461-002, 20-07-471-001, 20-07-471-002, 20-07-471-003, 20-18-200-016

66-B14-1*, Line 2B A strip of land being 72.0 feet in width being 36 feet on each side of the centerline of an existing electric transmission line located in the NE 1/4 of Section 18, T12N, R11W, Croton Township, Newaygo County, Michigan, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the North 1/4 corner of said Section 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section 18; thence S 01°01'13" E 976.64 feet along the West line of Government Lot 1 of said Section 18; thence N 88°58'47" E 270.87 feet to the centerline of an existing electric transmission line and the point of beginning of this centerline description; thence along said centerline the following 1 course: S 03°39'59" W 1656 feet more or less to the E-W 1/4 line of said Section 18 and the point of ending of this centerline description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin at the Croton Substation Site described below and terminate at the E-W 1/4 line of said Section 18.

66-B14-l '", Line 3A A strip of Land being 72.0 feet in width being 36 feet on each side of the centerline of an existing ele<:tric transmission line .located in the NE 1/4 of Secti.on 18, Tl2N, Rl IW, Croton Township,, Newaygo County. Michigan;.the centerline ofsaid strip being more particularly described as follows: To find 1he point of beeinning, commence at the North 114 corner of said Section 18i thence N 88°33'06'. E 1308.95 feet along the North line of said Section 18; thenc,e SO.I°01'13';'E 839.51 feet along th,e West line of Government Lot 1 of said Section 18 to the centerline of an existing electric transmission li.ne and the point of beginning of this c,enterline description; thence along said centerline the following 2 courses: S 74°40'21" E 72.16 feet and N 61°38'02"' E 63.08 feet to the Croton Substation Site Easement described below and the point of ending of this c,enterline description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points. said sidelines to begin at the West Hne of Government Lot 1 of said Section 18.and to terminate at tile Substation Site.

66-B14-l'", Croton Substation Site That part of the NE 1/4 of Section 18, Tl2N, Rl 1W, Croton Township,. Newaygo County, Michigan, being more particu1arly described as follows: To find the point of beginning, commence at the North 1/4 ,comer of said Seclion 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section l8i thence *S* 01'°01t 13;'E 575.88,feet along the West line of Govemment Lot I of said Section 18; thence N 88°58'47" E 128.43 fee1to the point of beginning of this descdption; thence **N** 00° 18;'41" W 231.95 feet; thence N 89°52'03" E 35.02 feet; thence *S* 00°07'57" E 20.00 feet: thence N 89°52'03" E 141.00 feet: thence N 00°07'57" W 20.00 feet: thence N 89°52'03" E 70.00 feet: thence S 00°07'.57" E 20.00 feet: thence N 89°52•03" E 260.49 feet: thence S 00°11'27" E 337.54 feet: thence S 89°48'44" W, 259.91 feet; thence N 00° 17' 19" W, 96.22 feet; thence N 89° 42' 38" E, 46.64 feet along rhe face of an existing building; thence N 00° 17' 22" W 34.84 feet along said face; thence *S* 89°42'38" W 57.43 feet along said facej thence S 00° 17' 22" E,5.00 feet along said faoe; thence S 89° 49' 16" W, 235.03 feet to the point of beginning of said easement.

Together with an easement for ingress and egress over the fol1owing described strip of land: A strip ofla11d being 16 feet in width being 8 feet on each side of the centerline of an existing Gravel Access Drive located in the NE 114 of Section 181 Tl2N, RIIW, Croton Township,.Newaygo County, Michigan, the centerhne of said strip being more particularly described as follows: To find the point of beginning, commence at the North 1/4 corner of said Section 18; thence N 88<'.133'06"E 1308.95 feet along the Nodh line ofsaid Section 18: thence SOI°01'13"E 708.72 feet along the West line of Government Lot 1 of said Section 18 to the centerline of an existing 16.0' wide gravel drive and the point of beginning of mhis centerline description; thenc,e along said centerline the following 3 courses: N89°56'37"E !31.10 feet; N 89°35' 45" E, 241.49 feet and N 89° 48' 44"' E 254.90 feet.; to the Substation Site ,easement and the point of ending of this centerline description. The sidelines of said I6 foot wide stdp of land are to begin at the West line of Government Lot 1 of said Section 18 and to ferminat the r.roton Substation Site described above.

66-B14-1 (Croton Substation Site Addition) A parcel of land in the Northeast 1/4 of Section 18, T12N, R11W, Croton Township, said parcel of land lying N'ly of and directly adjoining the parcel of land described under the caption "Croton Substation Site" on Page 8 of the Newaygo County portion of Exhibit A-Part I to the Agreement (being Page A00000812 in the overall page numbering of said Exhibit A-Part I to the Agreement), and being more particularly described as follows: To find the point of beginning of this description, commence at the North 1/4 corner of said Section 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section 18; thence S 01°01'13" E 575.88 feet along the West line of Government Lot 1 of said Section 18; thence N 88°58'47" E 128.43 feet; thence N 00°18'41" W 231.95 feet; thence N 89°52'03" E 35.02 feet; thence S 00°07'57" E 20.00 feet; thence N 89°52'03" E 141.00 feet; thence N 00°07'57" W 20.00 feet; thence N 89°52'03" E 60.00 feet to the Point of Beginning of this description; thence N 00°07'57" W 7.00 feet; thence N 89°52'03" E 130.00 feet; thence S 00°07'57" E 27.00 feet; thence S 89°52'03" W 120.00 feet; thence N 00°07'57" W 20.00 feet; thence S 89°52'03" W 10.00 feet back to the Point of Beginning. EXCEPTING THEREFROM that part of said parcel of land that lies within the following described strip of land:

"*Exception Strip*": A strip of land 72.0 feet in width, being 36 feet on each side of the centerline of an existing electric transmission line located in the Northeast 1/4 of Section 18 and the Southeast 1/4 of Section 7, all in T12N, R11W, Croton Township, the centerline of said strip of land being more particularly described as follows: To find the point of beginning, commence at the North 1/4 corner of said Section 18; thence N 88°33'06" E 1308.95 feet along the North line of said Section 18; thence S 01°01'13" E 368.22 feet along the West line of Government Lot 1 of said Section 18; thence N 88°58'47" E 406.87 feet to the centerline of an existing electric transmission line and the Point of Beginning of this centerline description; thence along said centerline the following 3 courses: N 00°34'56" W 178.97 feet, N 35°07'07" W 1882.42 feet, and N 28°52'36" W 1313 feet more or less, to the North-South 1/4 line of said Section 7 and the Point of Ending of this centerline description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points, said sidelines to begin on the North line of the parcel of land that is described under the caption "Croton Substation Site" on Page 8 of the Newaygo County portion of Exhibit A-Part I to the Agreement (being Page A00000812 in the overall page numbering of said Exhibit A-Part I to the Agreement) and to terminate on the North-South 1/4 line of said Section 7.

It is understood that the "Exception Strip", described immediately hereinabove as an exception to the parcel description first set forth above (to the extent that it lies within said parcel), is itself already "Premises" covered by the Agreement, said "Exception Strip" being described under the caption "Line 2A" on Page 8 of the Newaygo County portion of Exhibit A-Part I to the Agreement (being Page A00000812 in the overall page numbering of said Exhibit A-Part I to the Agreement).

Parcels: 20-18-200-016

Hardy

145-B19-6, 146-B19-1, 147-B19-1, Line 2A A strip of land 72.0 feet in width being 36.0 feet on each side of the centerline of an existing electric transmission line located in the South 1/2 of Section 28 and the SE 1/4 of Section 29, T13N, R11W, Big Prairie Township, Newaygo County, Michigan, the centerline of said strip being more particularly described as follows: To find the point of beginning, commence at the South 1/4 corner of said Section 28; thence N 89°41'55" E 517.60 feet along the South line of Government Lot 3 of said Section 28; thence N 00°18'05" W 1377.29 feet; thence N 44° 01' 43" E, 139.69 feet to the center line of an existing transmission line; thence N 47° 30' 09" W 364.55 feet along said center line; thence S 82° 36' 20" W 1406.44 feet along said center line to the point of beginning of this center line of easement description; thence along said center line the following 3 courses: S 82° 36' 20" W 1117.09 feet and S 78° 13' 17" W 606.97 feet and S 73° 43' 30" W 1300 feet more or less to the West line of Government Lot 1 of said Section 29 and the place of ending of this center line description. The sidelines of said 72.0 foot wide strip of land are to be extended or shortened to meet at angle points, said sideline to terminate at the West line of Government Lot 1 of said Section 29, T13N, R11W.

Parcels: 16-29-400-011, 16-28-300-004, 16-28-400-004

Rogers – N/A

EXHIBIT R

Seller's Marks

Mark	U.S. Registration No.	Filing Date	Registered Owner
Consumers Energy	2261348	Oct. 3, 1996	Consumers Energy Company
COUNT ON US	4443942	Jun. 25, 2013	Consumers Energy Company

EXHIBIT S

Form of Consumers Interconnection Agreement

[Attached.]



GENERATOR INTERCONNECTION & OPERATING AGREEMENT FOR PROJECTS WITH AGGREGATE GENERATOR OUTPUT OF GREATER THAN 550 KW OR UP TO 550 KW WITH NON-CERTIFIED EQUIPMENT BETWEEN CONSUMERS ENERGY COMPANY AND

GENERATOR INTERCONNECTION & OPERATING AGREEMENT (hereinafter, this Agreement), is made and entered into on _____, (hereinafter, the Effective Date), between CONSUMERS ENERGY COMPANY, a Michigan corporation, with offices located at One Energy Plaza, Jackson, MI 49201, herein termed "Utility", and _____ with offices located at _____, herein termed "Interconnection Customer." Utility and Interconnection Customer are hereinafter sometimes referred to individually as "Party" and collectively as "Parties" where appropriate.

WITNESSETH:

WHEREAS, Utility owns electric facilities and is engaged in the generation, purchase, distribution and sale of electric energy in the State of Michigan; and

WHEREAS, Interconnection Customer intends to construct and own a _____plant, known as the _____ Generating Plant, herein termed "Project", with a generator design capacity nameplate rating not to exceed _, and an export capacity limit of _____, located at _____,; and

WHEREAS, This Agreement does not address the sale of electricity to or from Utility; and

WHEREAS, The Parties desire to enter into this Agreement for the purposes, among others, of (a) describing (i) the facilities and associated appurtenances to interconnect the Project to Utility's distribution system, including defining the Point of Delivery and Interconnection Point, (ii) the facilities required for providing and regulating reactive power supply (kilovars) at the Project, and (iii) any modifications and additions necessary on Utility's distribution system as a result of the operation of the Project; (b) establishing the ownership interests of Utility and Interconnection Customer in such facilities; and (c) establishing the respective obligations and rights of the Parties with respect to the procurement, construction, installation, operation and maintenance of such facilities.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein set forth, the Parties hereto agree as follows:

SECTION 1
INTERCONNECTION FACILITIES

1.1 General

The Parties shall provide, as specified in this Section 1, certain facilities and associated appurtenances required to interconnect the Project to Utility's distribution system, consistent with Consumers Energy Company Generator Interconnection Procedures and the Michigan Public Service Commission's Interconnection and Distributed Generation Standards. Such facilities and associated appurtenances include, but shall not be limited to, interconnection, transformation, switching, control, metering, telemetering, protective relaying equipment (such protective relaying equipment required by Utility or Interconnection Customer to protect Utility's distribution system, its customers, and the Project from electrical faults occurring at the Project or on Utility's distribution system or on the systems of others to which Utility's distribution system is directly or indirectly connected) and any necessary additions or reinforcements by Utility to Utility's distribution system required as a result of the interconnection of the Project to Utility's distribution system. The facilities and associated appurtenances described in Subsections 1.2, "Interconnection Customer's Interconnection Facilities," and 1.3, "Utility's Interconnection Facilities," are hereinafter sometimes referred to as the "Interconnection Facilities." Interconnection Customer shall be responsible for the cost of the Interconnection Facilities, unless otherwise specified in this Agreement.

The Project, configured as discussed in this Agreement and depicted in Exhibit 2 – Wiring Diagram can be connected to Utility's distribution system as described herein. In the future, if the Interconnection Customer desires to install additional generating units at this present location, the Interconnection Customer must submit a written application to Utility. Utility will evaluate its distribution system to determine, in its sole discretion, if conditions at that time will allow said system to support additional capacity.

In the event future changes in (a) the design or operation of the Project, (b) Federal, State or local laws, regulations, ordinances or codes, (c) Interconnection Customer's requirements (such as additional generators located at the site location identified above) or (d) Utility's requirements necessitate additional facilities or modifications to the then existing Interconnection Facilities, the Parties shall undertake such additions or modifications as may be necessary. Before undertaking such future additions or modifications, the Parties shall consult, develop plans and coordinate schedules of activities so as to minimize disruption of the Interconnection Facilities and Utility's distribution system. The cost of such future additions or modifications to the Interconnection Facilities shall be borne by the Interconnection Customer, unless agreed upon otherwise at the time. The ownership, operation and maintenance responsibilities for any such future additions or modifications shall be made consistent with the responsibilities allocated in this Agreement.

1.2 Interconnection Customer's Interconnection Facilities

Interconnection Customer's Interconnection Facilities and associated appurtenances are described in Subsection 1.2 of Exhibit 1 – Scope of Facilities.

Interconnection Customer shall bear the cost of its Project unless otherwise specified in this Agreement. Interconnection Customer shall be solely responsible for all permits, zoning reviews, and other matters associated with obtaining rights from any governmental body or agency to construct its Project. Prior to Utility beginning construction of its Interconnection Facilities, Interconnection Customer shall provide a copy of all necessary documents granting the Interconnection Customer the right to construct its Project.



1.3 Utility's Interconnection Facilities

Utility Interconnection Facilities and associated appurtenances are described in Subsection 1.3 of Exhibit 1 – Scope of Facilities.

Interconnection Customer shall bear the cost of Utility's Interconnection Facilities unless otherwise specified in this Agreement. Utility shall be responsible for all permits, zoning reviews, and other matters associated with obtaining rights from any governmental body or agency to construct its Interconnection Facilities. Interconnection Customer shall reimburse Utility for all costs associated with the installation and connection of Utility's Interconnection Facilities. Interconnection Customer shall solely assume the risk that Utility may be unable to complete its Interconnection Facilities due to factors beyond its reasonable control.

Utility's Distribution Upgrades and associated appurtenances are described in Subsection 1.4 of Exhibit 1 – Scope of Facilities.

The Interconnection Customer shall bear the cost of Utility's Distribution Upgrades unless otherwise specified in this Agreement. Utility shall be responsible for all permits, zoning reviews, and other matters associated with obtaining rights from any governmental body or agency to construct its Distribution Upgrades. The Interconnection Customer shall reimburse Utility for all costs associated with the installation and connection of Utility's Distribution Upgrades. The Interconnection Customer shall solely assume the risk that Utility may be unable to complete its Distribution Upgrades due to factors beyond its reasonable control.

1.4 Easements and Permits

If necessary, prior to the installation of the Interconnection Facilities, Interconnection Customer is responsible to acquire required permits and necessary easements for the Interconnection Facilities in a form consistent with Utility's tariffs. These easements / permits may include, but shall not be limited to, rights of ingress and egress, rights to clear trees, and all necessary rights-of-way for installation and maintenance of Interconnection Facilities. The Interconnection Customer shall reimburse Utility for any costs and expenses Utility incurs to support Interconnection Customer in acquiring such easements / permits.

1.5 Relocation by Interconnection Customer

If at any time the Interconnection Customer requires Utility's Interconnection Facilities located on its premises to be relocated on such premises, Utility shall, at Interconnection Customer's expense and upon its request, relocate the same or give permission for Interconnection Customer to relocate the same. Interconnection Customer shall provide Utility with all necessary easement rights as required for the Interconnection Facilities located on Interconnection Customer's premises.

1.6 Payment by Interconnection Customer of Utility Costs and Expenses

1.6.1 Interconnection Customer shall reimburse Utility for its total cost and expenses incurred in providing the Interconnection Facilities required by Subsections 1.3 and 1.4. Interconnection Customer shall not be entitled to receive a refund of any portion of the total cost and expense incurred in providing the Interconnection Facilities required by Subsections 1.3 and 1.4 in the event that any Utility customers are later connected to such Interconnection Facilities.

1.6.2 Utility estimated conceptual cost (developed in accordance with "standard utility accounting practices") for providing and installing Utility Interconnection Facilities, including

easement rights and permits, is shown in Exhibit 3 – Payment Schedule. Utility estimates it will incur such cost and expense over a period of time. Interconnection Customer shall reimburse Utility for its estimated conceptual costs and expenses in accordance with invoices rendered by Utility. For all payments whose due date comes at least 15 days after the effective date of this Agreement, invoices will be rendered, and payments shall be due and payable such that Utility receives the payments by the dates indicated in Exhibit 3 – Payment Schedule. Payments shall be made in accordance with Subsections 1.6.3, 1.6.4 and 1.6.5.

1.6.3 When Utility has determined that all costs and expenses are accounted for on its books, Utility will issue a final invoice or credit to reconcile the estimated conceptual cost with the final work order estimate of the project. The final work order cost will be reviewed and reconciled to the estimated conceptual cost for each portion of the project covered under this Agreement. If Utility final work order cost is less than the payments received for the estimated conceptual cost provided in Exhibit 3 – Payment Schedule, Utility shall refund the incremental amount to Interconnection Customer. If Utility final work order cost is greater than the payments received for the estimated conceptual cost provided in Exhibit 3 – Payment Schedule, Utility shall issue a final invoice to Interconnection Customer for the incremental amount.

1.6.4 All payments to Utility shall be made payable to Consumers Energy Company and shall be sent to Consumers, Attention: Consumers Energy Company, P.O. Box 740309, Cincinnati, Ohio 45274-0309, or by wire transfer to a Consumers bank account or such other manner or at such place as Consumers shall, from time to time, designate by notice to Interconnection Customer. Payments made by wire transfer shall reference the appropriate invoice number for which payment is being made.

1.6.5 Any payment not made on or before the due date shall trigger a period of fifteen (15) days for Interconnection Customer to make such payment without additional charge. If payment is not made within such fifteen (15) day period, then Utility may cease work when all existing payments have been exhausted and shall not be required to resume work until Interconnection Customer makes all overdue payments.

SECTION 2
DESIGN AND CONSTRUCTION OF THE INTERCONNECTION FACILITIES

2.1 Authority for Construction

Except as provided in the following paragraph, Interconnection Customer will have sole authority to manage, design, supervise, construct, procure materials for, control and will take all steps which it deems necessary or appropriate for the installation of the Interconnection Facilities required pursuant to Subsection 1.2, "Interconnection Customer's Interconnection Facilities."

The design, specifications, installation and construction of the Interconnection Facilities required pursuant to Subsection 1.2 shall be in accordance with standards no less stringent than those used by Utility for its own distribution voltage level installations and shall be inspected and commented on by Utility prior to being placed into initial operation. However, Utility has no liability, obligation or responsibility with respect to such design, plans, specifications, installation or construction regardless of its inspection and comment thereon. Inspection of and comments by Utility shall not relieve Interconnection Customer of any of its obligations under this Agreement.

Utility shall exercise sole authority to manage, design, supervise, construct, procure materials for, control and take all steps which it deems necessary or appropriate for the installation and

connection of the Interconnection Facilities required pursuant to Subsection 1.3, "Utility's Interconnection Facilities".

2.2 Coordination of Construction Program

The Parties shall coordinate their respective construction programs essential to carrying out the installation by Interconnection Customer of its Interconnection Facilities required pursuant to Subsection 1.2 and the installation by Utility of its Interconnection Facilities required pursuant to Subsection 1.3 and will cooperate to ensure as closely as practicable the simultaneous completion of the installation of the Interconnection Facilities to be installed by Interconnection Customer and Utility, respectively.

2.3 Interconnection of the Project

Interconnection of the Project to Utility's distribution system shall be made after the following conditions have been satisfied:

2.3.1 Both Parties have declared their Interconnection Facilities ready for service;

2.3.2 Interconnection Customer has met the design, specifications, installation and construction requirements of the second paragraph of Subsection 2.1, Authority for Construction;

2.3.3 Interconnection Customer has provided adequate protective equipment to protect the equipment and service of Utility from damage or interruption from electrical faults occurring at the Project;

2.3.4 Utility has tested and accepted the billing meters and associated telemetry for the collection of the metered data required pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.3;

2.3.5 Interconnection Customer and Utility have agreed to a procedure to describe the process (i) for switching and tagging the interconnection facilities for workers' protection during periods when such equipment must be removed from service and (ii) for returning the equipment to service. Both Parties agree to follow the procedure for disconnecting and re-connecting the interconnection as outlined in the then-current version of Appendix G of the appropriate Consumers Energy Company Generator Interconnection Procedures document (or its then-current equivalent);

2.3.6 Interconnection Customer has installed all signage as required by Utility for identification of equipment and protection of employees.

2.3.7 If the Interconnection Customer requires backup power from Utility, the Interconnection Customer shall be responsible for contracting with Utility for the delivery of said backup power. The Interconnection Customer shall provide Utility satisfactory evidence that it has purchased the resources to supply backup power pursuant to Subsection 6.6, Project Backup Power; and

2.3.8 Interconnection Customer has reimbursed Utility for all costs associated with the installation of Utility's Interconnection Facilities as identified in Subsections 1.3 and 1.4.

2.4 Parallel Operation of the Project With Utility's Distribution System

Parallel operation of the Project with Utility's distribution system shall only begin after the following conditions have been satisfied and confirmed in writing by Utility to Interconnection Customer:

2.4.1 Interconnection Customer has met all of the requirements of Subsection 2.3;

2.4.2 Interconnection Customer has obtained written approval by Utility of all protective equipment required pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.2 and the direct transfer trip equipment required pursuant to Subsections 1.2 and 1.3 for the protection of Utility's distribution system. Approval will be granted after the required protective equipment is inspected and calibrated in accordance with the setting data issued by Utility. Inspection and calibration must be either performed or witnessed by Utility's personnel at Interconnection Customer's expense. Interconnection Customer must record the actual settings and inspection data on the setting document furnished by Utility and return such document to Utility for approval;

2.4.3 Interconnection Customer has developed operating and maintenance procedures, which Utility has accepted in writing, for those protective devices which directly connect to Utility's distribution system or interface with Utility's protective devices;

2.4.4 Utility has tested and accepted the telemetry / SCADA interface and concurs they meet the technical requirements as identified in the Telemetry, Disturbance and Power Quality Monitoring Requirements Section and the Communication Circuits Section of the Consumers Energy Company Generator Interconnection Procedures. Testing must be performed by Utility's personnel at Interconnection Customer's expense and acceptance will be communicated to Interconnection Customer in writing; and

2.4.5 Interconnection Customer has developed operating procedures to manually trip generation for system security pursuant to Subsection 6.4, System Security.

2.5 Subcontractors

Either Party may hire a subcontractor to perform its obligations under this Agreement and shall incorporate the obligations of this Agreement into its respective subcontracts, agreements and purchase orders. Each Party shall remain liable to the other Party for the performance of such subcontractor under this Agreement and shall fully defend, indemnify and hold the other Party harmless from all acts or omissions of its subcontractors.

SECTION 3
OPERATION AND MAINTENANCE

3.1 Operation and Maintenance By Utility

Utility shall have sole authority and responsibility to operate and maintain Utility's Interconnection Facilities required pursuant to Subsection 1.3, and in accordance with the applicable good utility practice standards of Utility. Utility may manually operate, when necessary, Utility's Interconnection Facilities and the isolation device provided by Interconnection Customer pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.2, and may perform preventive or emergency maintenance, or make system modifications, when necessary, on Utility's Interconnection Facilities. Normal maintenance shall be scheduled on Utility's Interconnection Facilities taking into consideration Interconnection Customer's schedule of maintenance for the Project. Such authority and responsibility shall include removing the Interconnection Facilities from service, when necessary, as

determined by Utility. Utility shall not be required to deliver energy to the Project or provide a temporary connection to the Project when maintenance or system modifications require disconnecting Utility's Interconnection Facilities from Utility's distribution system. Distribution upgrades required pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.4 are not subject to this Subsection 3.1.

3.1.1 Interconnection Customer shall reimburse Utility for all direct and indirect costs and expenses (including but not limited to, overtime pay, property taxes, insurance, equipment testing and inspections) incurred by Utility in owning, operating and maintaining Utility's Interconnection Facilities from the point in time in which Utility's Interconnection Facilities are ready for service. Such costs and expenses shall be determined by Utility in accordance with the standard practices and policies followed by Utility and in effect at the time such operation and maintenance are performed. As used in this Agreement, the term "maintenance" includes inspection, repair and replacement. Payment by Interconnection Customer of such costs and expenses shall be made in accordance with Subsection 3.1.4. In the event that Utility uses any part of Utility's Interconnection Facilities defined in Subsection 1.3 for the benefit of Utility's customers, then the allocation of the ongoing costs and expenses which are due to the ownership, operation and maintenance of Utility's Interconnection Facilities provided pursuant to Subsection 1.3, shall be re-determined with consideration for possible changes in: (a) Point of Delivery, (b) metering location, (c) operation and maintenance costs to Interconnection Customer to new Point of Delivery, if any, and (d) compensation to Utility for appropriate operating and maintenance costs from the new Point of Delivery, if any. Utility shall not be restricted in the use of Utility's Interconnection Facilities while such redetermination is being made.

3.1.2 If Utility performs the following tasks on the Interconnection Customer's behalf, the Interconnection Customer shall reimburse Utility for costs associated with (a) testing of metering and associated telemetry required pursuant to Subsection 2.3.4, (b) the relay setting information, inspection and calibration required pursuant to Subsection 2.4.2 and (c) the testing of the dispatching interface required pursuant to Subsection 2.4.4, which shall be separately billed by Utility.

3.1.3 The Utility shall be responsible for ordering and acquiring all equipment associated with the communication circuits pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.2 as well as the proper safety equipment required for the proper installation of said communication circuits, with the cost of such equipment and all continuing operating expenses being at the expense of the Interconnection Customer. Additional operation and maintenance expenses associated with telemetry facilities are the responsibility of the Interconnection Customer pursuant to Subsection 5.4.

3.1.4 Payments by Interconnection Customer of the costs and expenses described in Subsections 3.1.1 and 3.1.2 are as follows:

3.1.4.1 As soon as practicable after the end of each month in which operation and maintenance costs and expenses were incurred by Utility pursuant to Subsection 3.1.1 and 3.1.2, Utility shall furnish Interconnection Customer a statement describing the work performed or expense incurred and showing the amount of the payment to be made therefore by Interconnection Customer.

3.1.4.2 Each statement shall be paid by Interconnection Customer so that Utility will receive the funds by the 30th day following the date of such statement, or the first business day thereafter if the payment date falls on a non-business day.

3.1.4.3 All payments shall be made payable to Consumers Energy Company and shall be sent to Consumers, Attention: Consumers Energy Company, P.O. Box 740309, Cincinnati, Ohio 45274-0309, orby wire transfer toa Consumers' bank account or such other manner or at such place as Consumers shall, from time to time, designate by written notice to Interconnection Customer. Payments made by wire transfer shall reference the appropriate invoice number for which payment is being made.

3.1.4.4 Any payment not made on or before the due date shall bear interest, from the date due until the date upon which payment is made.

3.2 Operation and Maintenance By Interconnection Customer

Except as provided in Subsections 2.3.2 and 3.1 and the provisions of this Subsection 3.2, Interconnection Customer shall have sole authority and responsibility to operate and maintain the Interconnection Customer's Interconnection Facilities required pursuant to Subsection 1.2 in accordance with prudent industry practices.

Relay settings, for protective devices required by Utility, may be revised and documents stating such revisions may be issued by Utility if it determines that it is necessary to do so. The settings for these devices may be revised only if Utility issues documents specifying such revisions. In such event, the protective relay equipment shall be recalibrated by Interconnection Customer in accordance with such revised relay settings within a reasonable period specified by Utility. The procedure for recalibration and approval shall be the same as stated for the initial calibration pursuant to Subsection 2.4.2.

The protective relay equipment shall be tested every four (4) years (unless an extension is agreed to by Utility) to verify the calibration indicated on the latest relay setting document issued by Utility. If the protective relay equipment is not calibrated in accordance with the latest relay-setting document, it shall be recalibrated in accordance with Subsection 2.4.2, to conform with such data. Tests shall be conducted or witnessed by Utility at Interconnection Customer's expense. The results of such tests shall be provided to Utility in writing for review and approval.

Utility may, at any time in addition to that specified in the preceding paragraph, at Utility's expense, inspect and test Interconnection Customer's Interconnection Facilities to verify that the required protective interconnection equipment is in service, properly maintained, and calibrated to provide the intended protection. If necessary, this inspection may also include a review of Interconnection Customer's pertinent records.

Inspection, testing and/or approval by Utility or the omission of any inspection, testing and/or approval by Utility pursuant to this Agreement shall not relieve Interconnection Customer of any obligations or responsibility assumed under this Agreement.

SECTION 4
ACCESS

Utility, its agents and employees, shall have full right and authority of ingress and egress at all reasonable times on and across the premises of Interconnection Customer for the purpose of installing, operating, maintaining, inspecting, replacing, repairing, and removing its Interconnection Facilities located on the premises. The right of ingress and egress, however, shall not unreasonably interfere with Interconnection Customer's use of its premises.

SECTION 5
INTERCONNECTION POINT; POINT OF DELIVERY; METERING; TELEMETERING

5.1 Interconnection Point

The Interconnection Point shall be where the Interconnection Customer's Interconnection Facilities connect to Utility's distribution system.

5.2 Point of Delivery

The Point of Delivery shall be the point at which the Interconnection Customer's Interconnection Facilities connect to Utility's existing distribution facilities serving other customers. It is described in greater detail in Exhibit 5.

5.3 Metering

Measurements of electric energy deliveries shall be made by standard types of electric meters installed and maintained by Utility pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.3.

The standard electric meters shall be tested by Utility at least once every six (6) years. On request and at the expense of the Interconnection Customer, a special test may be performed. Representatives of Interconnection Customer shall be afforded the opportunity to be present at all routine or special tests and upon occasions when any readings, for purposes of settlements, are taken from meters not bearing an automatic record.

5.4 Telemetering

Certain telemetry facilities will be provided by Utility pursuant to Exhibit 1 – Scope of Facilities, Subsection 1.3 as a part of the Interconnection Facilities as being necessary for the proper and efficient collection of metering and control data. The cost and maintenance of such telemetry facilities and associated communication circuits shall be borne by Interconnection Customer.

SECTION 6
SERVICE CONDITIONS

6.1 Site Preparation

At its own expense, the Interconnection Customer shall make the proposed Project site available to Utility. Said site shall be free from hazard and shall be adequate for the operation and construction of distribution facilities necessary to interconnect the proposed Project.

6.2 Parallel Operation

It is understood that the Project will normally remain connected to and be operated in parallel with Utility's distribution system. The Interconnection Customer shall, at its expense, install and properly maintain protective equipment and devices and provide sufficiently trained personnel to protect its equipment and service, and the equipment and service of Utility from damage, injury or interruptions during the Project's parallel operation with Utility's distribution system, and, without limiting the indemnity provided in Subsection 7.1 herein, Interconnection Customer shall assume any loss, liability or damage to Interconnection Customer and Utility's distribution system and equipment caused by lack of or failure of such protection. Such protective equipment specifications and design shall be consistent with the Consumers Energy Company Generator Interconnection Procedures, and any successor and/or supplemental documents. Prior to the Project operating in

parallel with Utility's distribution system, the Interconnection Customer shall provide satisfactory evidence to Utility that it has met the Consumers Energy Company Generator Interconnection Procedures that are on file with the Michigan Public Service Commission and complied with all applicable laws, rules, regulations, guidelines, and safety standards.

6.3 Voltage and Frequency Control

Interconnection Customer shall cooperate with Utility to regulate the voltage level at the Point of Delivery by controlling its generators in accordance with Utility's instructions. Such instructions shall include, but not be limited to, (a) maintaining voltage or (b) delivering real and reactive power to the Point of Delivery at levels specified by Utility. Interconnection Customer shall cooperate with Utility to regulate the frequency by controlling its generators in accordance with Utility's instructions. Such instructions shall include, but not be limited to, frequency-droop curves. The instructions given by Utility shall be consistent with the normal practices adhered to by Utility with respect to its own generators located on its system.

6.4 System Security

Installation, inspection, and calibration of protective equipment to trip generation for under-or over-voltage and frequency operation shall be coordinated with Utility, pursuant to Subsection 2.4.2, so as not to degrade the security of Utility's distribution system. Operating practices developed by Interconnection Customer which call for manual tripping of generation for under-or over-voltage and frequency operation shall likewise be coordinated and be consistent with the voltage and frequency ride through provisions listed in the Consumer Energy Company Generator Interconnection Procedures during abnormal system voltage and frequency events, and any successor and/or supplemental documents, which are incorporated herein by reference.

6.5 Continuity of Service

Each Party shall exercise reasonable care to maintain continuity of service in the delivery and receipt of electric energy. If service becomes interrupted for any reason, the cause of such interruption shall be removed and normal operating conditions restored as soon as practicable.

6.6 Project Backup Power

If the Interconnection Customer requires backup power from Utility, the Interconnection Customer will contract with Utility for the delivery of power provided to the Project under one of Utility's established retail rates set forth in Utility's tariffs, which are incorporated herein by reference. The provisions of such contract shall be applied during periods when the Project is not delivering energy to Utility. The Interconnection Customer will contract with Utility for the purchase of energy or provide satisfactory evidence of the purchase of energy from an alternative energy supplier for the purpose of providing power to the Project during periods when the Project is not delivering energy to Utility's distribution system.

Interconnection Customer shall have sufficient voltage regulation at the Project to maintain an acceptable voltage level for Project equipment during such periods when the Project's generation is off line.

6.7 Utility's Obligation to Connect

Utility shall not be obligated to continue the electrical interconnection to the Project if it determines, in its sole discretion, that any one or more of the following conditions exist, including but not limited to: (a) those conditions listed in the Miscellaneous Operational Requirements section of the

Consumer Energy Company Generator Interconnection Procedures, (b) electrical characteristics of the Project are not compatible with the electrical characteristics of Utility's distribution system, (c) the Interconnection Customer is deficient in following either the voltage schedule or reactive power schedule established by Utility, (d) an emergency condition exists on Utility's distribution system, (e) Interconnection Customer's protective relay equipment fails, resulting in a lack of the level of protection required by prudent utility practice, (f) the Interconnection Customer's Project is determined to be disrupting Utility customers, (g) Utility requires disconnection of the Project in order to construct, install, maintain, repair, replace, remove, investigate, inspect or test any part of Utility's Interconnection Facilities or any other Utility equipment associated with the interconnection (also if a required component (example: communication circuit) or required modification to allow interconnection fails or becomes incapacitated and is not repaired in a timely manner), (h) by mutual consent, (i) Interconnection Customer commits a material breach of this agreement or (j) Interconnection Customer's failure to execute this agreement or upon cancellation or termination of this agreement. Utility shall electrically connect or reconnect its distribution system to the Project when, in Utility's sole opinion, the conditions named above cease to exist. Under any of the conditions listed above, Utility will follow the procedures for disconnecting and re-connecting the interconnection as outlined in Appendix G of the appropriate Consumers Energy Company Generator Interconnection Procedures document.

In the event future changes in either the (i) design or operation of the Project, (ii) federal, state or local laws, regulations or codes, (iii) Interconnection Customer's requirements, or (iv) Utility's requirements, necessitate additional facilities or modifications to the then existing Interconnection Facilities herein, the Parties shall undertake such additions or modifications as may be necessary. Before undertaking such future additions or modifications, the Parties shall consult, develop plans and coordinate schedules of activities to minimize disruptions to the Interconnection Facilities and minimize cost to the Interconnection Customer. The cost of such future additions or modifications to the Interconnection Facilities shall be borne by the Interconnection Customer unless agreed upon otherwise at the time, with payment due on a mutually agreed upon schedule. Such future additions or modifications shall be part of the Interconnection Facilities from the time they are placed in service. The ownership, operation and maintenance responsibilities for any such future additions or modifications shall be made consistent with the responsibilities allocated in this Agreement.

SECTION 7
INDEMNITY; INSURANCE

7.1 Indemnity

Except as set forth in Section 6.2 above, as between the Parties, unless caused by the sole negligence or intentional wrongdoing of the other Party, each Party to this Agreement shall at all times assume all liability for, any and all damages, losses, claims, demands, suits, recoveries, costs, legal fees, and expenses to the extent caused by its directors, officers, employees, and agents: (a) for injury to or death of any person or persons whomsoever occurring on its own system, and/or (b) for any loss, destruction of or damage to any property of third persons, firms, corporations or other entities occurring on its own system, including environmental harm or damage arising out of or resulting from, either directly or indirectly, the Interconnection Facilities or the DER, or arising out of or resulting from, either directly or indirectly, any electric energy furnished to it hereunder after such energy has been delivered to it by such other Party.

If this Agreement is one subject to the provisions of Michigan Act No. 165, PA 1966, as amended, then Interconnection Customer will not be liable under this section for damages arising out of injury or damage to persons or property directly caused or resulting from the sole negligence of Utility, or

any of its officers, agents or employees. The provisions of this Subsection 7.1 shall survive termination or expiration of this Agreement.

7.2 Insurance

Interconnection Customer shall obtain and continuously maintain throughout the term of this Agreement General Liability insurance written on an occurrence form, or other form acceptable to Utility, and covering bodily injury and property damage liability with a per occurrence amount of at least:

Interconnection Level	Minimum Limit
4	$2,000,000
5	$3,000,000

Such limit may be achieved through any combination of primary and excess or umbrella liability insurance policy. When requested in writing by Utility, said limit shall be increased each year that this Agreement is in force to a limit no greater than the amount arrived at by increasing the original limit by the same percentage change as the Consumer Price Index - All Urban Workers (CPI-U.S. Cities Average). Such policy shall include, but not be limited to, contractual liability for indemnification assumed by Interconnection Customer under this Agreement.

Consumers Energy Company, its Directors, Officers, and Employees are to be included as ADDITIONAL INSUREDS and such coverage shall be primary to any insurance maintained by Consumers Energy Company. Utility shall not be responsible for any unpaid premiums under Interconnection Customer policy.

Evidence of insurance coverage on a certificate of insurance shall be provided to Utility when requested by the Utility. Interconnection Customer shall immediately provide Utility written notice if the policy is cancelled or substantial changes are made that affect the additional insured. At Utility's request, Interconnection Customer shall provide a copy of the policy to Utility.

All certificates and notices shall be sent to:

CONSUMERS ENERGY COMPANY
Attn: Insurance Risk Management
One Energy Plaza
Jackson, MI 49201-2276
InsuranceCertificates@cmsenergy.com

SECTION 8
LIMITATION ON LIABILITY

Neither party shall in any event be liable to the other for any incidental or consequential damages such as, but not limited to, lost profits, revenue or good will, interest, loss by reason of shutdown or non-operation of equipment or machinery, increased expense of operation of equipment or machinery, cost of purchased or replacement power or services or claims by customers, whether such loss is based on contract, warranty, negligence, strict liability or otherwise, even if it has been advised of the possibility of such damages.

SECTION 9
FORCE MAJEURE

Neither Party shall be liable for failure to perform any of its obligations hereunder, to the extent due to events outside of its control, including, but not limited to events such as fire, flood, storm, other natural disaster, national emergency or war, epidemic or pandemic (referred to collectively as "Force Majeure"),

and not due to labor problems, inability to obtain financing, negligence or other similar condition of such Party, provided that either Party has given the other prompt notice of such occurrence. The Party affected shall exercise due diligence to remove such Force Majeure with reasonable dispatch but shall not be required to accede or agree to any provision not satisfactory to it in order to settle and terminate a strike or other labor disturbance.

A 'force majeure event' means an act of God; labor disturbance; act of the public enemy; war; insurrection; riot; fire, storm, or flood; explosion, breakage, or accident to machinery or equipment; an emergency order, regulation or restriction imposed by governmental, military, or lawfully established civilian authorities; or another cause beyond a party's control. A force majeure event does not include an act of negligence or intentional wrongdoing. Neither Party shall be liable for failure to perform any of its obligations hereunder to the extent due to a force majeure event, provided that either Party has given the other prompt notice of such occurrence. The Party affected shall exercise due diligence to remove such force majeure with reasonable dispatch but shall not be required to accede or agree to any provision not satisfactory to it in order to settle and terminate a strike or other labor disturbance.

SECTION 10
BREACH AND DEFAULT

A breach of this Agreement ("Breach") shall occur upon the failure of a Party to perform or observe any material term or condition of this Agreement, which includes, but is not limited to:

a. Failure to pay money when due;

b. Failure to comply with any material term or condition of this Agreement, including but not limited to any breach of any material representation, warranty or covenant made in this Agreement;

c. A Party: (i) becomes insolvent; (ii) files a voluntary petition in bankruptcy under any provision of any federal or state bankruptcy law or shall consent to the filing of any bankruptcy or reorganization petition against it under any similar law; (iii) makes a general assignment for the benefit of its creditors or (iv) consents to the appointment of a receiver, trustee or liquidator;

d. Assignment of this Agreement in a manner inconsistent with the terms of this Agreement;

e. Failure of either Party to provide information or data to the other Party as required under this Agreement, provided the Party entitled to the information or data under this Agreement requires such information or data to satisfy its obligations under this Agreement.

In the event of a Breach by either Party, the Parties shall continue to operate and maintain, as applicable, its Interconnection Facilities, protection and Metering Equipment, transformers, communication equipment, building facilities, software, documentation, structural components and other facilities and appurtenances that are reasonably necessary for Utility to operate and maintain Utility's distribution system and for the Interconnection Customer to operate and maintain its Project in a safe and reliable manner. Upon a Breach, the non-breaching Party shall give written notice of such Breach to the breaching Party. The breaching Party then has 30 days to cure the Breach. If a Breach is not cured within the period provided for herein or as agreed to by the Parties, the Party in Breach shall be deemed in default ("Default"). The non-defaulting Party shall have the right to terminate this Agreement and recover any damages and/or pursue any other remedies available under this Agreement, by law, or in equity. Termination is not the non-defaulting Party's exclusive remedy and is in addition to any other rights and remedies it may have under this Agreement or by law. Failure of non-defaulting Party to exercise any of its rights under this Section shall

not excuse defaulting Party from compliance with the provisions of this Agreement nor prejudice rights of Utility to recover damages for such default.

SECTION 11
SUCCESSORS AND ASSIGNS

This Agreement shall inure to the benefit of and be binding upon the successors and assigns of the respective Parties hereto. This Agreement shall not be assigned, transferred or otherwise alienated without the other Party's prior written consent, which consent shall not unreasonably be withheld. Any attempted assignment, transfer or alienation without such written consent shall be void.

SECTION 12
GOVERNING LAW

This Agreement shall be deemed to be a Michigan contract and shall be construed in accordance with and governed by the laws of Michigan, exclusive of its conflict of laws principles.

SECTION 13
EFFECTIVE DATE, TERM AND TERMINATION

The Effective Date of this Agreement shall be the date of execution and shall continue in effect until this Agreement is terminated as provided herein. The Agreement may be terminated at any time by mutual agreement of both Parties, or by either Party upon giving the other at least ninety (90) days written notice if one or more of the conditions exist as outlined in Subsection 6.7, Utility's Obligation to Connect.

SECTION 14
RETIREMENT

Upon termination of this Agreement pursuant to Section 13 or at such time after any of the Interconnection Facilities described herein are no longer required, the Parties shall mutually agree upon the retirement of said Interconnection Facilities which may include without limitation (i) dismantling, demolition, and removal of equipment, facilities, and structures, (ii) security, (iii) maintenance and (iv) disposing of debris. The cost of such removal shall be borne by the Interconnection Customer.

SECTION 15
ENTIRE AGREEMENT AND AMENDMENTS

This Agreement and the Consumers Energy Compan Generator Interconnection Procedures shall constitute the entire understanding between the Parties with respect to the subject matter hereof, supersedes any and all previous understandings between the Parties with respect to the subject matter hereof, and bind and insure to the benefit of the Parties, their successors, and permitted assigns. No amendments or changes to this Agreement shall be binding unless made in writing and duly executed by both Parties.

SECTION 16
NO PARTNERSHIP

This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the Parties or to impose any partnership obligation or partnership liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party.

SECTION 17
SEVERABILITY

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (i) such portion or provision shall be deemed separate and independent, (ii) the Parties shall negotiate in good faith to restore insofar as practicable the benefits to each Party that were affected by such ruling, and (iii) the remainder of this Agreement shall remain in full force and effect.

SECTION 18
NOTICE TO PARTIES

Unless otherwise provided in this Agreement, any notice, consent or other communication required to be made under this Agreement, shall be in writing and (i) mailed postage prepaid, by certified or registered mail, return receipt requested; (ii) mailed via a nationally recognized overnight delivery service, (iii) delivered in person to the address as the receiving Party may designate in writing, or (iv) delivered via electronic mail to the address stated in Exhibit 4, which either Party may update by a notice to the other Party sent in accordance with this Section 18.

All notices shall be effective when received.

SECTION 19
NO THIRD PARTY BENEFICIARIES

This Agreement is intended for the benefit of the Parties hereto and does not grant any rights to any third parties unless otherwise specifically stated herein.

SECTION 20
SECTION HEADINGS

The various headings set forth in this Agreement are for convenience of reference only and shall in no way affect the construction or interpretation of this Agreement.

SECTION 21
COUNTERPARTS AND ELECTRONIC DOCUMENTS

This Agreement may be executed and delivered in counterparts, including by a facsimile or an electronic transmission thereof, each of which shall be deemed an original. Any document generated by the Parties with respect to this Agreement, including this Agreement, may be imaged and stored electronically and introduced as evidence in any proceeding as if original business records. Neither Party will object to the admissibility of such images as evidence in any proceeding on account of having been stored electronically.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement.

CONSUMERS ENERGY COMPANY _____

By: _____ By: _____
(Signature) (Signature)

REDACTED

_____	_____
(Print or Type Name)	(Print or Type Name)
Title:_____	Title:_____
Date:_____	Date:_____

EXHIBIT 1
SCOPE OF FACILITIES

1.1 **General Facilities**

Such facilities and associated appurtenances as required to interconnect Utility's existing _____ to the Interconnection Customer's _____ Project by way of a new or modified interconnection, which shall include, but shall not be limited to the following:

1.2 **Interconnection Customer's Interconnection Facilities**

1.2.1 [Insert Interconnection Customer Interconnection Facilities Description].

1.3 **Utility's Interconnection Facilities**

1.3.1 [Insert Utility Interconnection Facilities Description].

1.4 **Utility's Distribution Upgrades:**

1.4.1 [Insert Utility Distribution Upgrades Description].

REDACTED

EXHIBIT 2
WIRING DIAGRAM

REDACTED

EXHIBIT 3
PAYMENT SCHEDULE

Payment	Amount Due	Milestone Description
1	$	Upon execution of this Agreement
2	$	By
	$	
	$	**Total Estimated Conceptual Cost**
	True-up (invoice or refund)	After Construction Complete and all costs have settled.

REDACTED

EXHIBIT 4
NOTICE TO PARTIES

If to Utility
Consumers Energy Company
1945 West Parnall Road P12-235
Jackson, Michigan 49201
customer.generation@cmsenergy.com

If to Interconnection Customer

Company Name;
Address;
Address;
Attention:
Email:

REDACTED

EXHIBIT 5
POINT OF DELIVERY AND UTILITY'S INTERCONNECTION FACILITIES

EXHIBIT T

Form of Regulatory Disallowance Agreement

[Attached.]

REGULATORY DISALLOWANCE AGREEMENT

THIS REGULATORY DISALLOWANCE AGREEMENT (this "**Agreement**") is entered into as of [ ], 20[__] (the "**Effective Date**") by and between Consumers Energy Company, a Michigan corporation (together with its successors and permitted assigns, "**Consumers**"), and Confluence Hydro, LLC, a Delaware limited liability company (together with its successors and permitted assigns, "**Owner**"). Consumers and Owner are sometimes referred to herein individually as a "**Party**" and collectively as the "**Parties**".

RECITALS:

WHEREAS, Consumers and Owner are parties to that certain Purchase and Sale Agreement, dated as of September 3, 2025 (the "**PSA**"), pursuant to which Consumers has agreed to sell and Owner has agreed to purchase the Project Assets (as defined in the PSA), including all Assumed Liabilities (as defined in the PSA) on the terms and subject to the conditions provided therein;

WHEREAS, Consumers and Owner are parties to that certain Renewable Energy Purchase Agreement, dated as of September 3, 2025 (the "**PPA**"), pursuant to which Owner has agreed to sell and Consumers has agreed to purchase the energy, power and capacity produced from the Projects (as defined in the PSA), on the terms and subject to the conditions provided therein;

WHEREAS, in the event of a Disallowance Order, Section 7.4 of the PPA gives Consumers the right to reduce the charges to be paid to Owner pursuant to the PPA to the amount that the Michigan Public Service Commission allows Consumers to recover from its customers and, in such event, the right of Owner to terminate the PPA in its entirety (a "**Regulatory Disallowance Termination Event**");

WHEREAS, in the event of a Regulatory Disallowance Termination Event, Consumers is willing to pay to Owner a Regulatory Disallowance Termination Payment (as defined below); and

WHEREAS, the Parties desire to memorialize the terms and conditions under which Consumers will pay to Owner the Regulatory Disallowance Termination Payment in the event of a Regulatory Disallowance Termination Event.

NOW THEREFORE, in consideration of the premises and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Party hereby represents, warrants, covenants, and agrees for the benefit of the other Party as follows:

AGREEMENT:

1. **Defined Terms**. All capitalized terms used herein but not otherwise defined in this Agreement shall have the meaning ascribed to such terms in the PPA.

2. **Regulatory Disallowance Termination Payment**.

(a) If, prior to the end of the Term of the PPA, Owner terminates the PPA in its entirety pursuant to Section 7.4 of the PPA (the "**Termination**"), then upon written demand by Owner (the "**Demand**"), Consumers agrees to pay to Owner an amount (the "**Regulatory Disallowance Termination Payment**") equal to (i) the lesser of (A) the Economic Loss Payment (defined below) or (B) Two Hundred Fifty Million Dollars ($250,000,000.00) plus or minus, as the case may be, (ii) (A) the aggregate amount, if any, owed by Consumers to Owner under the PPA that has accrued and remains outstanding under the PPA for the period prior to the termination of the PPA less (B) the aggregate amount, if any, owed by

Owner to Consumers under the PPA that has accrued and remains outstanding under the PPA for the period prior to the termination of the PPA. The Demand shall include Owner's proposed calculation of the Regulatory Disallowance Termination Payment and the components thereof, together with reasonable supporting documentation.

(b) The "**Economic Loss Payment**" shall equal: (i) an amount equal to the present value of the economic losses incurred by Owner, if any, for the remainder of the Term as a result of the Termination (the "**Losses**"), minus (ii) an amount equal to the present value of the economic benefit to Owner, if any, for the remainder of the Term resulting from the Termination (the "**Gains**"). If Owner's Gains exceed its Losses, then the Economic Loss Payment shall be equal to zero dollars ($0). To the extent the Economic Loss Payment exceeds Two Hundred Fifty Million Dollars ($250,000,000.00), the Parties agrees that Owner has no duty mitigate or take any actions to reduce the payment of the Two Hundred Fifty Million Dollars ($250,000,000.00) by Consumers to Owner.

(c) Consumers shall have ten (10) Business Days after receipt of the Demand to review the Regulatory Disallowance Termination Payment and provide a written objection (if any) to all or any portion of the Regulatory Disallowance Termination Payment ("**Disputed Items**") in the Demand (an "**Objection Notice**"). Failure to provide an Objection Notice within ten (10) Business Days after receipt of the Demand shall irrevocably terminate Consumers' right to object to all or any portion of the Regulatory Disallowance Termination Payment in the Demand.

(d) If Consumers timely provides Owner with an Objection Notice, then Consumers and Owner will meet in person or electronically to discuss and attempt to resolve in good faith any Disputed Items within ten (10) Business Days after Owner's receipt of the Objection Notice. If Consumers and Owner are unable to resolve such Disputed Items and agree upon the Regulatory Disallowance Termination Payment within twenty (20) Business Days following Owner's receipt of the Objection Notice, or no such meeting has taken place within such ten (10) Business Days period, then either Party shall have the right to seek examination and final determination of the Regulatory Disallowance Termination Payment by a nationally recognized independent consultant or national recognized accounting firm mutually acceptable to Consumers and Owner (the "**Consultant**"). The objective of such examination and final determination by the Consultant shall be restricted to (i) the Disputed Items identified in the Objection Notice, and (ii) the accuracy, reasonableness and completeness of the supporting documentation provided by Owner in the Demand in respect of such Disputed Items. The costs associated with the Consultant's review and determination of the Disputed Items shall be borne equally by both Parties. Notwithstanding anything to the contrary in this Agreement, the final determination by the Consultant with respect to the Disputed Items will not prevent either Party from exercising their rights to pursue any remedies at law or equity to enforce the terms of this Agreement with respect to the final determination by the Consultant with respect to the Disputed Items.

(e) Within ten (10) Business Days after the later of a final determination of the Disputed Items (i) by the Consultant in accordance with Section 2(d) above or (ii) as result of the Parties exercising their rights to pursue any remedies at law or equity to enforce the terms of this Agreement pursuant to the last sentence of Section 2(d), Consumers shall pay the portion, if any, of the Regulatory Disallowance Termination Payment resolved pursuant to clause (i) or (ii) above to Owner by wire transfer of immediately available funds to the account specified in writing by Owner in its Demand delivered to Consumers pursuant to Section 2(a) above, or, if so requested in such Demand, by such alternative means of delivery of immediately available funds or other method of payment as is reasonably acceptable to Consumers.

(f) Within ten (10) Business Days after receipt of the Demand, Consumers shall pay the portion, if any, of the Regulatory Disallowance Termination Payment not subject to a timely submitted Objection Notice to Owner by wire transfer of immediately available funds to the account specified in

writing by Owner in its Demand delivered to Consumers pursuant to Section 2(a) above, or, if so requested in such Demand, by such alternative means of delivery of immediately available funds or other method of payment as is reasonably acceptable to Consumers.

(g) Interest shall accrue at the Late Payment Interest Rate (i) on the undisputed portion of the Demand commencing on the eleventh (11th) Business Day after Consumers receipt of the Demand and (ii) on the disputed portion of the Demand commencing on the twenty-first (21st) Day after Owner's receipt of the Objection Notice if and to the extent that the Parties mutually agree or it is determined pursuant to Section 2(e)above that such disputed portion of the Demand was due.

(h) Following the payment of the Regulatory Disallowance Termination Payment in full, including all applicable interest:

(i) Owner irrevocably waives on behalf of itself and its Affiliates (including the Subsidiaries) and their respective members, shareholders, managers, directors, officers or employees, any claims, rights or remedies, including for damages that it or they may have under this Agreement or the PPA or at law or in equity, against Consumers and its Affiliates and their respective members, shareholders, managers, directors, officers or employees, *provided, however* that any breach of the covenant in Section 7.4 of the PPA requiring Consumers to use commercially reasonable efforts to oppose any proposal to disallow costs included in the PPA shall be specifically excluded from the release set forth in this subsection (i), *provided further*, that any Regulatory Disallowance Termination Payment made under this Agreement shall offset against any Termination Payment payable by Consumers due to breach of Section 7.4 of the PPA and any Termination Payment made by Consumers due to breach of Section 7.4 of the PPA shall offset against any Regulatory Disallowance Termination Payment payable by Consumers hereunder; and

(ii) Consumers irrevocably waives on behalf of itself and its Affiliates and their respective members, shareholders, managers, directors, officers or employees, any claims, rights or remedies, including for damages, that it or they may have under this Agreement or the PPA or at law or in equity against Owner and its Affiliates (including the Subsidiaries) and their respective members, shareholders, managers, directors, officers or employees, *provided, however* that the release set forth in this subsection (ii) shall exclude any such claims, rights or remedies, including for damages, that it or they may have with respect to claim(s) that Owner or any of its Affiliates (including the Subsidiaries) may bring due to breach by Consumers of Section 7.4 of the PPA.

3. **Binding Effect; Assignment**. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and permitted assigns, and no other Person shall have any right, benefit, or obligation hereunder. Neither this Agreement nor any of the rights or obligations hereunder shall be assigned by either of the Parties, in whole or in part, without the prior written consent of the other Party, and any attempt to make any such assignment without such consent shall be null and void.

4. **Acknowledgement**. The Parties acknowledge and agree that the terms of this Agreement, including Consumers' obligation to pay the Regulatory Disallowance Termination Payment due under this Agreement, shall not in any way be subject to the Liability Cap (as defined in the PSA).

5. **Governing Law; Waiver of Jury Trial**.

(a) This Agreement shall be governed by and construed in accordance with the internal laws of the State of Michigan, without regard to principles of choice of law and conflicts of law.

(b) Each Party agrees that any suit, action, or proceeding, whether claim or counterclaim, brought or instituted by either Party on or with respect to this Agreement or which in any way relates,

directly or indirectly, to this Agreement, or any event or occurrence arising out of or in any way connected with this Agreement shall be tried only by a court and not by a jury. **TO THE FULLEST EXTENT PERMITTED BY LAW, EACH PARTY HERETO HEREBY EXPRESSLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUCH SUIT, ACTION, OR PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER, OR IN CONNECTION WITH THIS AGREEMENT**. **EACH PARTY HERETO FURTHER WAIVES ANY RIGHT TO CONSOLIDATE ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.**

6. **Entire Agreement; Amendments and Waivers**. This Agreement, together with the PPA, constitutes the entire agreement between the Parties pertaining to the subject matter hereof and supersedes all prior agreements, understandings, negotiations, and discussions, whether oral or written, of the Parties with respect to the subject matter hereof. No supplement, modification, or other amendment or waiver of this Agreement shall be binding on the Parties unless executed in writing by the Party to be bound thereby. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provision hereof (whether similar or not), nor shall such waiver constitute a continuing waiver unless otherwise expressly provided.

7. **No Third-Party Beneficiaries**. Nothing expressed or referred to in this Agreement will be construed to give any Person, including any Affiliates of a Party, other than the Parties to this Agreement (and their successors and permitted assigns) any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this Agreement.

8. **No Strict Construction**. The Parties have participated jointly in the negotiation and drafting of this Agreement. In the event an ambiguity or question of intent or interpretation arises, this Agreement shall be construed as if drafted jointly by the Parties, and no presumption or burden of proof shall arise favoring or disfavoring any Party by virtue of the authorship of any of the provisions of this Agreement.

9. **Counterparts**. This Agreement may be executed in any number of duplicate originals and each duplicate original shall be deemed to be an original. This Agreement may be executed in several counterparts, each of which counterparts shall be deemed an original instrument and all of which together shall constitute a single agreement.

[*Signature Page to Follow*]

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date first above written.

Consumers:

CONSUMERS ENERGY COMPANY,
a Michigan corporation

By: _____
Name:
Title:

Owner:

CONFLUENCE HYDRO, LLC,
a Delaware limited liability company

By: _____
Name:
Title:

EXHIBIT U

Flowage Easements

Alcona Project

030-004-100-010-00
Warranty Deed: Liber 207 Page: 156
T25N R5E SEC 4 E 1/2 OF E 1/2 EXC ALCONA PARK. EXC E OF THE HEAD OF AUSABLE RIVER EXC ISLANDS LYING WLY OF SAID THREAD.

030-011-100-015-00
Warranty Deed: Liber 207 Page: 156
T25N, R5E, MICHIGAN MERIDIAN, CURTIS TOWNSHIP Section 11: The S 1/2 of the SW 1/4, the SW 1/4 of the SE 1/4; and all that part of the NE 1/4 of the SW 1/4 and the W 1/2 of the NW 1/4 lying WE'ly of the angling highway known as Au Sable Road of said Section 11; excepting from this description any part of a strip of land 100 feet in width being a part of the abandoned right of way of the Detroit and Mackinac Railway located on said land, said exception containing approximately 0.7 acres.

030-004-100-005-00
Warranty Deed: Liber 207 Page 156
T25N R5E, MICHIGAN MERIDIAN, CURTIS TOWNSHIP

030-010-100-010-00
Warranty Deed: Liber 207 Page 156
T25N, R5E, MICHIGAN MERIDIAN, CURTIS TOWNSHIP Section 10: The S 1/12 of the SE 1/4, and all that part of the NE 1/4 of the NE 1/4 lying WE'ly of the center of the Au Sable Road in said Section 10, excepting from this description any part of a strip of land 100 feet in width being a part of the abandoned right of way of the Detroit and Mackinac Railway located on said land, said exception containing approximately 0.6 acres.

030-011-100-010-00
Warranty Deed: Liber 207 Page 156
T25N R5E SEC 11 N3/4 OF W1/2 LYING SWLY OF FORMER AUSABLE & NORTHWESTERN RR & ELY OF ALCONA POND ALCONA PARK

110-033-100-010-00
Warranty Deed: Liber: 196 Page: 656
T26N R5E SEC 33 ENT.SEC E 800 FT OF SE 1/4 OF NW 1/4, E 800 FT OF NE 1/4 0 SW 1/4, SE 1/4 EXC SW 1/4. WLY.

030-009-100-015-00
Warranty Deed: Liber: 207 Page: 156
T25N R5E SEC 9 W1/2 OF NE1/4 & E1/2 OF NW1/4 ALSO S1/2 EXC SW1/4 OF SW1/4 EXC NE1/4 OF SE1/4.207-160 S237-527

110-034-200-050-00
Warranty Deed: Liber: 182 Page: 158
T26N R5E SEC 34 NE 1/4, SE 1/4 OF NW 1/4,ENT-S 1/2

030-010-100-004-00
Warranty Deed: Liber: 207 Page: 156
T25N R5E SEC 10 NE1/4 OF NE1/4 LYING NELY OF CL AUSABLE RD & S1/2 OF SE1/4

030-004-100-015-00
Warranty Deed: Liber: 207 Page: 156
T25N R5E SEC 4 W 3/4 OF SEC 4 ALSO E1/2 OF NE1/4 LYING ELY OF THREAD OF AUSABLE RIVER ALSO ISLANDS IN E1/2 OF NE1/4 LYING WLY OF SAID THREAD 207-160

030-015-200-005-00
Warranty Deed: Liber: 182 Page: 158
T25N R5E SEC 15 ENT SEC EXC SE1/4 OF NE1/4

030-003-200-005-00
Warranty Deed: Liber 207 Page 156
T25N R5E SEC 3 SW1/4 LYING WLY & SLY OF ALCONA PARK UNDER WATER EXC SMALL ISLANDS FPC LICENSED AREA.

030-014-100-050-00
Warranty Deed: Liber: 196 Page: 656
T25N R5E SEC 14 W1/2 OF SE1/4 & SW1/4 OF NE1/4 LYING SLY OF CL CO RD & S1/2 OF NW1/4 LYING SLY OF CL CO RD & N1/2 OF SW1/4 EXC COM W1/4 COR, N 229.4 FT TO S ROW CO RD, N89DEGE 290.08 FT ALG S ROW TO POB, S33DEGE 492.85 FT, N56DEGE 190 FT, N33 DEGW 367.91 FT TO S ROW, W 227.42 FT ALG ROW TO POB & N1/2 ON NW1/4 OF NE1/4 & N1/2 OF NE1/4 OF NW1/4 FPC LICENSED AREA

030-011-100-005-00
Warranty Deed: Liber: 207 Page: 156
T25N R5E SEC 11 E1/2 & W1/2 LYING NELY CL AUSABLE RD & S1/2 OF SW1/4 207-160

030-016-200-005-00
Warranty Deed: Liber: 207 Page: 156
T25N R5E SEC 16 NW 1/4 EXC SE 1/4 OF NW 1/4 & N 1/2 OF NE ¼

River Parcel Section 14, Town 25 North, Range 5 East
Warranty Deed: Liber 207 Page 156 & Liber 196 Page 656 & Liber 182 Page 158
TOWNSHIP TWENTY-FIVE NORTH, RANGE FIVE EAST MICHIGAN MERIDIAN SECTION FOURTEEN:
PARCEL A - A parcel of land located in the Northeast Quarter of the Southeast Quarter Section Fourteen, Township Twenty-five North, Range Five East, described as follows: A strip of land 200 feet wide, being 50 feet wide on the Easterly side and 150 feet wide on the Westerly side of a line described as follows: To find the place of beginning, commence at the Southeast corner of said section; thence S 89 degrees 21 minutes 24 seconds W, 781.5 feet; thence N 00 degrees 06 minutes 34 seconds W, 208.35 feet; thence N 12 degrees 27 minutes 10 seconds W, 1121.37 feet to the South 1/8 line of said section and the place of beginning of this description; thence N 12 degrees 19 minutes 33 seconds W, 1200.95 feet to the East 1/8 line of said Section 14; thence continuing N 12 degrees 19 minutes 33 seconds W to the East and West 1/4 line of said section and the place of ending of this description.

PARCEL B - The North 335 feet of the Southeast Quarter of the Southeast Quarter of said Section Fourteen. containing 13.54 acres of land, more or less; and together therewith all appurtenances thereunto belonging or in anywise appertaining.

Calkins Bridge Project

03-51-105-144-00
LOTS 158, 159, 162 & 163 EX PT LYING BELOW CONTOUR 618 O. P. SEC 28 (2016).

03-51-105-142-00
PT OF LOT 157 COM AT NWLY COR LOT 157 TH SLY TO SW COR TH ELY TO SE COR TH NWLY TO BEG ALSO LOT 164 EX THAT PT OF LOTS 157 & 164 LYING BELOW CONTOUR 618 0.8. SEC 28.

03-22-015-010-10
COM NW COR OF SEC TH E 704.71' TO KALAMAZOO RIVER TH S 6 DEG 09' 45"" E ALG SD RIV 115.79' TO C/L ALLEGAN DAM RD TH N 83 DEG 18' 05"" W ALG SD C/L 120.59' TH S 31 DEG 30' 31"" W 132.72' TH S 4 DEG 02' 43"" W 272' M/L TO CONTOUR 618 TH SW'LY ALG SD CONTOUR TO W LIN OF SEC TH N 1109' M/L TO POB SEC 15 T2N R14W

03-51-105-260-00
LOTS 1074 TO 1077 INC ALSO UNNUM} BERED LOT LYING NLY OF LOT 1074 ALSO THAT PT OF LOT 1073 AND OF THE UNNUMBERED LOT NLY THEREOF LYING WLY OF PMRY O. P. SEC 28.

03-51-105-152-00
COM AT INTERSEC OF MONROE & CHESTNUT STS TH N 33' TO N LIN MONROE ST TH E 33' TO BEG TH N 89 DEG W 266' TH N 128.28' TH N 89 DEG W 47.06' TH N 16 DEG W 481.65' (BEING A CHD ON A CUV TO RT WITH A RAD OF 2542.01 & A CTL ANG OF 14 DEG 41' 48") TH N 10 DEG W 241.6' TH N 79 DEG E 250' TH S 35 DEG E 117.75' TH S 10 DEG E 135' TH S 11 DEG E 104.8' BEING A CHD ON A CUR TO THE LF WITH A RAD OF 2242.01 FT & A CTL ANG OF 14 DEG 41' 48") TH S 75 DEG W 40' TH S 2 DEG E 97.33' TH S 107.13' TH E 217.51' TH S 336.93' TO POB ALSO PT OF LOTS 156 & 157 DESC AS COM AT NW COR LOT 165 TH NW'LY TO NW COR LOT 157 TH E'LY TO NE COR LOT 157 TH SE'LY TO NE COR LOT 165 TH SW'LY TO POB EX THAT PT BELOW CONTOUR 618 THE ABOVE DESC BEING PT OF LOTS 167 THRU 170, 151 THRU 157, 1067 THRU 1072, 1081 THRU 1087, 1092 THRU 1097 & ADJ UNNUM LOTS & ABANDONDED STS IN O P SEC 28 T2N R13W (2000)

Calkins-51-water T2N, R3W, Sec 20, 28
51-water T2N, R3W, Sec 20, 28, no parcel number identified on GIS

Cooke Project

[To be provided]

Croton Project

20-08-400-002
Notice of Claim: Liber 282 Page 486

ALL THAT PART OF NE1/4 NW1/4 SE1/4 LYING ABOVE CONTOUR 722.5 U.S.G.S. DATUM SEC 8, T12N R11W

20-08-400-004
Quitclaim Deed: Liber Series C Page 5905
11 ISLAND IN BACKWATERS OF LITTLE MUSK RIVER DES AS THAT PART OF N 3/4 OF W 1/2 SE1/4 SE1/4 ABOVE EL. 722.5 FT U.S.G.S. DATUM SEC 8, T12N R11W

20-15-100-002
Quitclaim Deed: Liber 344 Pag: 219
That part of the North 1/2 of the NW 1/4 lying below EI 722.50 feet U.S.G.S Datum Section 15, T12N, R11W, Croton Twp.

20-08-200-001
Quick Claim Deed: Liber 337 Page 500
Gov't Lot 1 above said EI 722.50 feet, also that part of the SE 1/4 of the NE 1/4 lying North Grand Rapids St, Section 8, T12N, R11W, Croton Twp.

20-15-100-014
Warranty Deed: Liber V Page 8835
PT OF N1/2 NW1/4 LYG ABOVE ELEV 722.5 FT LYG S OF C/L OF THE LITTLE MUSKEGON RIVER SEC 15, T12N, R11W

20-08-400-001
Quitclaim Deed: Liber 282 Page 486
All that part of Section 8 lying below EI 722.50 feet U.S.G.S Datum EX Gov't Lots 2 & 3 Section 8, T12N, R11W, Croton Twp.

20-09-300-004
Quitclaim Deed: Liber 337 Page 418
That part of W 3/4 of South 1/2 lying below EI 722.5 feet U.S.G.S Datum Section 9, T12N, R11W, Croton Twp.

20-16-200-017
Quitclaim Deed: Liber J Page 9644
PART OF NE 1/4 COM 395.35 FT W OF NE COR, TH S 13D 53'50"E ALG A MEANDER TRAV LINE ALG LITTLE MUSKEGON RIVER 303.88 FT, S 24D 23' 26"E 478.85 FT, S 48D 05'35"W 370.31 FT, S 23D 45'15"E 367.55 FT TO N 1/8 LINE, N 89D 29'46"W 262.33 FT, N 34D 07'26"W 216.15 FT, N 64D 31'25"W 232.63 FT, N 35D 43'55"W 227.40 FT, N 14D 51'31"E 341.70 FT TO END OF TRAV LINE, TH N 56D 10'47"E 329.29 FT, N 11D 53'17"W 215.63 FT, N 63D 54'01"W 73.57 FT, N 89D 22'34"W 374.15 FT, S 29D 22'25"W ACROSS LITTLE MUSK RIVER 370 FT TO MEANDER TRAV ALG SD RIVER, S 76D 33'07"E 190.82 FT, S 29D 08'46"E 112.11 FT TO END OF TRAV, N 89D 23'26"W 779.03 FT, N 00 D05'50"E 360 FT TO MEANDER TRAV, N 35D 00'08"W 202.10 FT TO N SEC LINE S89D 22'34"E 1489.96 FT TO POB, INCL LAND LYNG BETWTRAV LINE & RIVER. EXC THAT PORTION OF ABOVE-DESCRIBED PROPERTY LYING BELOW THE ELEVATION 722.5 FEET U.S.G.S, DATUM (PCL "A" OF SURVEY BY N. OCHS 06/06/86 & 08/31/17 DRAWING NUMBER 17098M) 22.93A M/L SEC 16, T12N R11W

Five Channels Project

[To be provided]

Foote Project
061-013-300-001-00
Warranty Deed: Liber 347 Page 57
13301 T24N R7E SEC 13 A 80 S 1/2 OF SW ¼

061-015-400-001-50
Warranty Deed: Liber 347 Page 57
T24N R7E SEC 15 A 80 E 1/2 OF SE ¼

062-020-300-001-00
Warranty Deed: Liber 57 Page 375
T24N R8E SEC 20 A 202 S 1/2 OF SE 1/4 EXC THAT PART LYG S OF AUSABLE RIVER ALSO SW 1/4 EXC THAT PART OF SE 1/4 OF SW 1/4 LYG S OF AUSABLE RIVER & EXC THAT PART OF SW 1/4 OF SW 1/4 LYG SLY & WLY OF CENTER OF THREAD OF AUSABLE RIVER

062-020-300-001-50
Warranty Deed: Liber 57 Page 375
24N R8E SEC 20 A 1 PART OF SW 1/4 OF SE 1/4 & SE 1/4 SW 1/4 LYG S OF AUSABLE RIVER (PART OF OLD ORCHARD PARK) ASSESSED W/062-028-100-002-0

062-019-300-001-00
Covenant Deed: Liber 71 Page 410
T24N R8E SEC 19 A 200 M/L S 1/2 EXC NE 1/4 OF SW 1/4 EXC PART OF S 1/2 OF SE 1/4 & EXC S 1/2 OF SE 1/4 OF SW ¼ LYG SLY OF CENT THREAD OF AUSABLE RIVER AND A STRIP OF LAND 251 FT WIDE IN THE S 1/2 OF SE 1/4 OF SW 1/4

062-020-300-001-75
Warranty Deed: Liber 347 Page 57
T24N R8E SEC 20 A 36.7 THAT PART OF SW 1/4 OF SW 1/4 LYG WLY & SLY OF CENTER THREAD OF AUSABLE RIVER

062-019-300-001-50
Warranty Deed: Liber 347 Page 57
T24N R8E SEC 19 A 80 M/L THAT PART OF S 1/2 OF SE 1/4 & THAT PART OF S 1/2 OF SE 1/4 OF SW 1/4 LYING SLY OF AUSABLE RIVER EXC A STRIP OF LAND 251 FT WIDE ACROSS THE S 1/2 OF SE 1/4 OF SW ¼

Loud Project

[To be provided]

Hodenpyl Project

2312-30-4101
Deed: Liber 319 Page 519
Section 30, Town 23 North, Range 12 West, the Southwest 1/4 of the Southwest 1/4; the East 1/2 of the Southwest 1/4; the Southeast 1/4 of the Northwest 1/4; that part of the Southwest 1/4 of the Northeast 1/4 lying South of the center thread of Tar Creek; and a parcel in the Northwest 1/4 of the Southeast 1/4 described as follows: Commencing at a point on the North line of the Northwest 1/4 of the Southeast 1/4 which point is 400 feet East of the Northwest comer of said Northwest 1/4 of the Southeast 1/4, 500 feet; thence South at right angles to said North line 350 feet; thence Westerly parallel to said North line 67 feet; thence North 30 degrees West 173.2 feet; thence North 60 degrees West 400 feet to the point of beginning. and Section 30, Town 23 North, Range 12 West, the North 1/2 of the Southwest 1/4 of the Southeast 1/4. and Section 30, Town 23 North, Range 12 West, the Northwest 1/4 of the Southeast 1/4, EXCEPT therefrom a parcel of land described as commencing at a point in the North line of said Northwest 1/ 4 of the Southeast 1/ 4, which point is East of and 400 feet distant from the Northwest comer of said Northwest 1/4 of the Southeast 1/4; thence Easterly along said North line of the Northwest 1/4 of the Southeast 1/4 500 feet to a point; thence South at right angles to said North line 350 feet to a point; thence Westerly parallel to said North line 67 feet to a point; thence North 30 degrees West 173.2 feet to a point; thence North 60 degrees West 400 feet to the point of commencement, said Exception being the same more or less, meaning hereby to Except and Exclude from the land hereby conveyed the identical parcel of land described in a deed running from the Iosco Land Company to Consumers Power Company, dated February 9, 1923, recorded February 16, 1923, in Liber 95 of Deeds, page 602, Wexford County, Michigan, Section 30. and Section 30, Town 23 North, Range 12 West, the Northeast 1/4 of the Southeast 1/4 and the Southeast 1/4 of the Southeast 1/4.

2412-36-1306
Notice of Claim: Liber 644 Page 779 & Warranty Deed: Liber 107 Page 828
Commencing at the East 1/4 corner of Section; thence West 2153.25 feet to the point of beginning; thence North 12°37'59" East 169.26 feet; thence North 14°51'37" East 361.51 feet to the southerly right of way line of Riverview Road; thence South 64°56'00" West along the right of way 293.07 feet; thence South 34°56'00" West 160 feet; thence South 34°56' West 132 feet; thence South 4°56'00" West 85.68 feet to a point which is South 4°56' West 200 feet from the Southeast corner of Lot 1 Guthrie Acres; thence North 85°04' West parallel with the South line of Lot 1, 220 feet more or less to the Easterly flood plain of the Manistee River; thence Southerly along the flood plain 92 feet more or less to the East/West 1/4 line; thence East 560 feet more or less to the point of beginning; EXCEPT a 20 foot wide parcel described as commencing at the East 1/4 corner of Section, West 2324.8 feet to the point of beginning; thence North 7°41'05" East 116.5 feet; thence North 32°32'55" West 87.70 feet to the road right of way; thence North 2°52'55" West 40.25 feet; thence South 32°32'55" East 130.14 feet; thence South 7°41'05" West 120.89 feet; thence West 20.22 feet to the point of beginning. Also a parcel commencing at the East 1/4 corner of Section, West 2324.8 feet to the point of beginning; thence West 252.3 feet; thence South 22°22' East 21.5 feet; thence East 241.41 feet; thence North 7°41'05" East 20.22 feet to the point of beginning; EXCEPT parcel commencing at the East 1/4 corner of Section, West 2153.25 feet to the point of beginning; thence

West 151.33 feet; thence North 7°41'05" East 120.89 feet; thence North 33°22'35" West 130.56 feet; thence North 37°50' West 39.1 feet; thence Northerly along the Southerly right of way of Riverview Road North 34°56'00" East 160 feet; thence North 64°56'00" East 292.03 feet; thence South 14°51'37" West 361.51 feet; thence South 12°37'59" West 169.26 feet to the point of beginning, Section 36, Town 24 North, Range 12 West

2412-36-3101
Deed: Liber 362 Page 201
The North 100 feet of the North 1/2 of the Northeast 1/4 of the Southwest 1/4 of Section 36, Town 24 North, Range 12 West. Property also known as: A parcel of land located in the Southeast 1/4 of the Northwest 1/4 of Section 36, Town 24 North, Range 12 West, described as commencing at the West 1/4 corner of said section, thence North 87° 46' 22" East, 1896.34 feet along the East and West 1/4 line of said section to the point of beginning of this description; thence continuing North 87° 46' 22" East, 212.00 feet to a survey iron on the Westerly bank of the Manistee River; thence due North 45 feet, thence Westerly along a line measured 45 feet North of and parallel to the East and West 1/4 line, 212.00 feet; thence South 45 feet to the point of beginning.

2412-36-3106
Deed: Liber 246 Page 498
The South 2 rods of the Northwest 1/4 of the Southwest 1/4, AND the South 1/2 of the Northeast 1/4 of the Southwest 1/4, EXCEPT a parcel commencing at the South 1/8 line and West shore line of Manistee River; thence Northerly along the water's edge to a point 300 feet due North of the 1/8 line; thence West 300 feet; thence South to the 1/8 line; thence East to the Point of Beginning, Section36, Town 24 North, Range 12 West, Wexford Township, Wexford County, Michigan

2412-36-3102
Deed: Liber 246 Page 498
A part of the North One-Half of the Northeast One-Quarter of the Southwest One-Quarter (N1/2 NE1/4 SW1/4) of Section 36, Town 24 North, Range 12 West, described as commencing at the West quarter corner of said Section 36, thence North 87 degrees 45 minutes 22 seconds East along the East-West quarter line of said Section 36; a distance of 2615.62 feet to the North-South quarter line; thence South 00 degrees 14 minutes 02 seconds East along the North-South quarter line of said Section 36, a distance of 100.06 feet to the point of beginning; thence continuing South 00 degrees 14 minutes 02 seconds East 120.07 feet; thence South 87 degrees 46 minutes 02 seconds West 1308.26 feet; thence North 00degrees 07 minutes 01 seconds West 120.08 feet along the West 1/8 line; thence North 87 degrees 46 minutes 22 seconds East 1308.01 feet to the Point of Beginning

2412-36-3108
Deed: Liber 246 Page 498
A part of the North 1/2 of the Northeast 1/4 of the Southwest 1/4 of Section 36, Town 24 North, Range 12 West, Wexford Township, Wexford County, Michigan, described as: Commencing at the West 1/4 corner of said Section 36; thence North 87 degrees 46 minutes 22 seconds East, along the East-West 1/4 line of said Section 36, 2,615.62 feet to the North-South 1/4 line: thence South 00degrees 14 minutes 02 seconds East along the North-South 1/4 line of said Section 36, 220.13 feet to the point of beginning; thence continuing South 00 degrees 14 minutes 02 seconds East, 175.11 feet; thence South 87 degrees 46 minutes 22 seconds West, 435.42feet; thence South 64 degrees 01 minutes 37 seconds West, 176.56 feet; thence

North 82 degrees 35 minutes 44 seconds West, 424.79 feet; thence North 38 degrees 32 minutes 43 seconds East, 231.08 feet; thence North 87 degrees 46 minutes 22 seconds East, 871.02 feet to the point of beginning

2412-36-3104
Notice of Claim: Liber 27 Page 493 & Easement Liber 107 Page 466
A part of the N 1/2 of the NE 1/4 of the SW 1/4 of Section 36, T24N, R12W, Wexford Township, Wexford County, Michigan, described as commencing at the West 1/4 corner of said Section 36; thence N87°46'22"E along the East-West quarter line of said Section 36, a distance of 2615.62 feet to the North-South quarter line of said Section 36; thence S00°14'02"E, along the North-South quarter line, 395.24 feet to the point of beginning; thence continuing S00°14'02"E, 169.55 feet; thence S87°53'52"W, 1308.86 feet; thence N00°07'01"W, 166.76 feet along the West 1/8 line; thence N87°46'22"E, 292.78 feet; thence S82°35'44"E, 424.79 feet; thence N64°01'37"E, 176.56 feet; thence N87°46'22"E, 435.42 feet to the point of beginning.

2412-36-3105
Notice of Claim: Liber 27 Page 493 & Liber 584 Page 168 & Easement Liber 107 Page 466
A part of the N 1/2 of the NE 1/4 of the SW 1/4 of Section 36, T24N, R12W, Wexford Township, Wexford County, Michigan, described as commencing at the W 1/4 corner of said Section 36; thence N 87°46'22" E along the E-W 1/4 line of said Section 36, 2615.62 feet to the N-S 1/4 line of said Section 36; thence S 00°14'02" E along the N-S 1/4 line of said Section 36, 564.79 feet to the point of beginning; thence continuing S 00°14'02" E 90.05 feet; thence S 87°53'52" W, 1309.05 feet; thence N 00°07'01" W 90.05 feet along the W 1/8 line; thence N 87°53'52" E, 1308.86 feet to the point of beginning.

2412-36-3107
Notice of Claim: Liber 27 Page 493 & Liber 584 Page 168 & Easement Liber 107 Page 466
A part of the South 1/2 of the Northeast 1/4 of the Southwest 1/4, Section 36, Township 24 North, Range 12 West, described as follows: Commencing at the intersection of the South 1/8 line and the West shore line of the Manistee River; thence in a Northerly direction along the West water's edge of the Manistee River to a point which is 300 feet due North of the said South 1/8 line; thence West 300 feet; thence South to the South 1/8 line; thence Easterly along the South 1/8 line to the point of beginning. ALSO, an Easement for ingress and egress over and across the South 2 rods of the Northwest 1/4 of the Southwest 1/4, Section 36, Township 24 North, Range 12 West; ALSO an easement for ingress and egress over and across the South 2 rods of the South half of the Northeast 1/4 of the Southwest 1/4, Section 36, Township 24 North, Range 12 West.

2412-36-4101
Warranty Deed: Liber 246 Page 24 & Liber 246 Page 23 & Liber 223 Page 170 & Liber 202 Page 582 & Liber 107 Page 282
The North 1/2 of the Southeast 1/4 of Section 36, Town 24 North, Range 12 West, EXCEPT that part laying West of the Manistee River, AND EXCEPT that part laying South and Easterly of a line described as follows: Beginning at a point on the East line of said Section that is South 00° 00' 00" West 203.35 feet from the East 1/4 comer; thence South 90° 00' 00" West, 1633.00 feet; thence South 36° 20' 00" West 390 feet more or less to the left bank of the Manistee River and the point of ending, ALSO EXCEPT the following 20 foot wide parcel, described as commencing at the East 1/4 comer; thence West on the East-West 1/4 line 2324.80 feet to the point of beginning; thence South 89° 11' 05" West on said 1/4 line 253.30 feet; thence South 27° 22' 00" East 21.50 feet; thence North 89° 11' 05" East 241.41 feet; thence North 07° 41' 05" East, 20.22 feet to the point of beginning. Also including a parcel described as: Parcel B: A 20 foot

wide parcel of land in the Northeast 1/4 of Section 36, Town 24 North, Range 12 West, described as follows: Commencing at the East 1/4 comer of said section; thence South 89° 11' 05" West on the East/West 1/4 line, 2324.80 feet to the Point of Beginning; thence 7° 41' 05" East, 116.50 feet; thence North 32° 32' 55" West 87.70 feet to the Riverview Road right of way; thence Northerly along said right of way on a 66 foot radius curve to the left, the chord bearing North 2° 52' 55" West 40.25 feet; thence South 32°32' 55" East 130.14 feet; thence South 7°41' 05" West 120.89 feet; thence South 89° 11' 05" West 20.22 feet to the Point of Beginning.

Hardy Project

Hardy-09- Muskegon River
Deed: Liber 107 Page 100
Lots 1-6 Sec 9, Lots 1-6 Sec 15, Lots 1-7, NE1/4 NE1/4 & SW1/4 NE1/4 Sec 16

09 029 001 530
Deed: Liber 245 Page 233
SEC 29 T14N R10W PART OF GOVT LOT 2 COM AT NE COR SEC 29 TH S 89 DEG 31 M W ALG N SEC LINE 798.18 FT TH S 2147.81 FT TO MEANDER TRAVERSE LINE ALG W BANK OF MUSKEGON RIVER TH ALG LINE S 38 DEG 21 M E ALG TRAVERSE LINE OF RIVER 217.04 FT TH S 46 DEG 39 M E 78.68 FT TO POB TH CONT ALG A MEANDER LINE S 46 DEG 39 M E 276.94 FT TH S 25 DEG 59 M W 181.79 FT TH N 62 DEG 37 M W 70 FT TH N 54 DEG 59 M W 164.35 FT TH N 18 DEG 17 M E 239.07 FT TO POB SUBJECT TO 66 FT WIDE EASEMENT PARCEL 3 SURVEY L 14 PG 113

09 029 001 520
Deed: Liber 245 Page 233
SEC 29 T14N R10W PART OF GOVT LOT 2 COM AT NE COR SEC 29 TH S 89 DEG 31 M W ALG N SEC LINE 798.18 FT TH S 2147.81 FT TO PT ON MEANDER TRAVERSE LINE ON W BANK MUSKEGON RIVER TH S 38 DEG 21 M E ALG TRAVERSE LINE 62.95 FT TO POB TH CONT ALG LINE TH S 38 DEG 21 M E 154.09 FT TH S 46 DEG 39 M E 78.68 FT TH S 18 DEG 17 M W 239.07 FT TO PT ON MEANDER TRAVERSE LINE TH N 54 DEG 59 M W 85.93 FT TH N 63 DEG 32 M W 106.66 FT TH N 16 DEG 6 M E 317.48 FT TO POB SUBJECT TO 66 FT WIDE EASEMENT PARCEL 2 SURVEY L 14 PG 113

09 029 001 175
Deed: Liber 245 Page 233
SEC 29 T14N R10W COM AT N 1/4 COR TH S 0 DEG 10 M W 1249 FT TH E 265 FT TH S 45 DEG 45 M E 155 FT TO POB. TH S 21 DEG 49 M E 476.49 FT TH S 12 DEG 14 M E 440.64 FT TH N 57 DEG 8 M E 36.42 FT TH N 80 DEG 45 M E 169.69 FT TH N 563.09 FT TH W 198.69 FT TH N 45 DEG 45 M W 376.78 FT TO POB. PART OF GOVT LOT 2 PARCEL C SURVEY L 11 PG 265

09 029 001 275
Deed: Liber 245 Page 233

SEC 29 T14N R10W COM AT N 1/4 COR SEC 29 TH S 0 DEG 10 M W ALG N-S 1/4 LINE 1249 FT TH E 265 FT TH S 45 DEG 45 M E 531.78 FT TH E 198.69 FT TO POB. TH N 89 DEG 42 M E 200 FT TH S 8 DEG 37 M W 632.32 FT TH S 82 DEG 43 M W 100 FT TH N 0 DEG 32 M W 636.86 FT TO POB. DIV 1 PARCEL B INCLUDING LAND TO WATER EDGE

09 029 001 285
Deed: Liber 245 Page 233
SEC 29 T14N R10W COM AT N 1/4 COR SEC 29 TH S 0 DEG 10 M W ALG N-S 1/4 LINE 1249 FT TH E 265 FT TH S 45 DEG 45 M E 531.78 FT TH E 198.69 FT TH N 89 DEG 42 M E 200 FT TO POB. TH CONT. N 89 DEG 42 M E 102.28 FT TH S 46 DEG 7 M E 97.72 FT TH S 16 DEG 47 M W 579.61 FT TH S 88 DEG 12 M W 100 FT TH N 8 DEG 37 M E 632.32 FT TO POB. DIV 2 OF PARCEL B INCLUDING LAND TO WATERS EDGE

09 029 001 300
QCD: Liber 245 Page 233
SEC 29 T14N R10W PART OF GOVT. LOT 2 BEG AT A PT WHICH BEGINS S 0 DEG 10 M W ALG N & S 1/4 LINE 1249 FT, E 265 FT, S 45 DEG 45 M E 531.78 FT TH N 89 DEG 42 M E 302.28 FT TH S 46 DEG 7 M E 97.72 FT TO POB. TH CONT S 46 DEG 7 M E 412.49 FT TH S 43 DEG 48 M W 407.32 FT TH N 82 DEG 14 M W 184.59 FT TH N 16 DEG 47 M E 579.61 FT TO POB. DIV 3 OF PARCEL B INCLUDING LAND TO WATERS EDGE ALONG WITH EASEMENT

09 029 001 500
Deed: Liber 245 Page 233
SEC 29 T14N R10W PART OF GOVT LOT 2 COM AT NE COR SEC 29 TH S 89 DEG 31 M W ALG N SEC LINE 798.18 FT TH S 2147.81 FT TO POB TH S 38 DEG 21 M E ALG TRAVERSE LINE ON TOP BANK 62.95 FT TH S 16 DEG 6 M W 317.48 FT TH ALG A MEANDER LINE N 63 DEG 32 M W 146.31 FT TH CONT. ALG SD MEANDER LINE N 47 DEG 6 M W 43.58 FT TH N 11 DEG 49 M E 325.18 FT TH S 38 DEG 59 M E 137.05 FT TH N 51 DEG 0 M E 75.95 FT TO POB. SUBJECT TO 66 FT WIDE EASEMENT PARCEL 1 SURVEY L 14 PG 113 SPLIT/COMBINED ON 06/24/2020 FROM 09 029 001 500, 09 029 001 550

09 029 001 600
Deed: Liber 245 Page 233
A part of Government Lots 2 and 4 in the NE 1/4 of Section 29, Town 14 North, Range 10 West, more particularly described as commencing at the NE corner of said Section 29; thence South 89 degrees 31 minutes 56 seconds West along the North Section meander traverse line the following course and distances: South 55 degrees 28 minutes 16 seconds East, 277.58 feet; South 27 degrees 28 minutes 03 seconds East, 294.12 feet; South 00 degrees 42 minutes 11 seconds East, 50.72 feet; North 50 degrees 05 minutes 11 seconds West, 310.91 feet; and North 62 degrees 37 minutes 18 seconds West, 230.76 feet; thence North 25 degrees 59 minutes 29 seconds East, 181.79 feet to the POB, together with an easement for ingress and egress which runs through parcels A, B, C and to Parcel D. The Center Line of said easement terminates at the N property line of Parcel D at a point that is South 25 degrees 59 minutes 29 seconds East, 33.45 feet from the NE corner of Parcel D. Mecosta Township, Mecosta County, Michigan.

09 029 001 400

Deed: Liber 245 Page 233
A parcel of land located in Government Lot 2, Section 29, Town 14 North, Range 10 West, Mecosta Township, Mecosta County, Michigan, described as: Commencing at the North 1/4 corner of Section 29; thence South 00 degrees 10 minutes 01 seconds West along the North-South 1/4 line 1249.00 feet; thence the following courses and distances along the Southerly line of a 66-foot drive easement: East 265.00 feet, South 45 degrees 45 minutes 36 seconds East 531.78 feet, East 500.00 feet and South 45 degrees 43 minutes 00 seconds East 510.00 feet to the point of beginning of this parcel; thence North 44 degrees 17 minutes 00 seconds East 66.00 feet; thence South 38 degrees 59 minutes 25 seconds East 187.40 feet; thence South 11 degrees 49 minutes 36 seconds West 325.18 feet; thence North 71 degrees 21 minutes 14 seconds West along the bank of the Muskegon River 400.00 feet; thence North 44 degrees 17 minutes 00 seconds East 403.40 feet to the point of beginning, and includes all land to the water's edge of the Muskegon River.

09 029 001 150
Deed: Liber 245 Page 233
A parcel of land located in Government Lots 1 and 2, Section 29, Town 14 North, Range 10 West, described as beginning at a point which is South 00 degrees 10 minutes 01 seconds West 1249.00 feet and due East 132.00 feet from the North 1/4 corner; thence continuing due East 133.00 feet; thence South 45 degrees 45 minutes 36 seconds East 155.00 feet; thence South 21 degrees 49 minutes 34 seconds East 476.49 feet; thence South 12 degrees 14 minutes 10 seconds East 440.64 feet; thence South 57 degrees 08 minutes 45 seconds West 185.93 feet; thence South 44 degrees 10 minutes 51 seconds West 20.18 feet; thence North 17 degrees 26 minutes 05 seconds West 1149.24 feet to the Point of Beginning; and including such lands as are Southeasterly of the above described property to the shore of the Hardy Dam backwaters of the Muskegon River Together with an easement for ingress and egress across a 66 foot parcel lying North of and adjacent to a line described as follows: Beginning 1249 feet South of the North 1/4 corner of Section 29, Town 14 North, Range 10 West; thence East 265 feet; thence South 45 degrees 45 minutes 36 seconds East 531.45 feet; thence East 193.69 feet to the point of ending of said described line.

09 029 001 100
Deed: Liber 245 Page 233
A parcel of land located in Government Lots 1 and 2, Section 29, T 14 N, R 10 W, Mecosta Township, Mecosta County, Michigan, described as beginning at a point on the N-S 1/4 Line located S 00 degrees 10 minutes 01 seconds W 1249.00 feet from the North1/4 Corner; Thence East 132.00 feet; Thence S 17 degrees 26 minutes 05 seconds E, 1149.24 feet; Thence S 44 degrees 10 minutes 51 seconds W, 100.00 feet; Thence S 48 degrees 52 minutes 27 seconds W, 258.06 feet; Thence S 21 degrees 13 minutes 42 seconds W, 115.71 feet; Thence S 89 degrees 36 minutes 19 seconds W along the E-W 1/4 Line 174.54 feet; Thence N 00 degrees 10 minutes 01 seconds E along the N-S 1/4 Line 1446.97 feet to the Point of Beginning and being subject to the rights of Elder Road. ALSO included is an Easement for ingress and egress across a 66-foot parcel Northerly of and adjacent to the Northerly border of the property extending from the most Northwesterly corner of the parcel being described to the most Northeasterly corner of the parcel being described. Title is subject to road and utility easements, and outstanding oil, gas and mineral interests, if any, and there is no guarantee as to the westerly border of the property beyond the center of 230th Avenue.

09-031-002-500
Warranty Deed: Liber 158 Page 62
SEC 31 T14N R10W E 1/2 SE 1/4 AND SW 1/4 SE 1/4 AKA GOVT LOT 9

Mio Project

001-495-004-00
Deed: Liber 27 Page 371
Lot Number 4 of Ausable Heights, a Subdivision of part of the Southwest quarter of the Southeast quarter and the Southeast quarter of the Southwest quarter of Section Two, Town Twenty-Six (26) North, Range Two East, according to the recorded plat thereof.

001-495-001-50
Deed: Liber 27 Page 371
Lot One (1) of AuSable Heights, a subdivision of part of the SW 1/4 of the SE 1/4 and the SE 1/4 of the SW 1/4 of Section 2, Town 26 North, Range 2 East, according to the recorded plat thereof as recorded in Libe 1 of Plats on Page 38
AND
Lot number 2 of AuSable Heights, a subdivision of part of the Southeast 1/4 of the Southwest 1/4 of the Southwest 1/4 of the Southeast 1/4 of Section 2, Town 26 North, Range 2 East, according to the recorded Plat thereof, subject to restrictions and easements of record.

001-795-003-00
Deed: Liber 27 Page 371
Lot Number Three (3) of Ausable Heights, a subdivision located within Section Two (2), Town Twenty-Six (26) North, Range Two (2) East, according to the recorded plat thereof.

001-495-005-00
Deed: Liber 27 Page 371
T26N R2E SEC 02 - AUSABLE HEIGHTS LOT 5, BIG CREEK TOWNSHIP.

001-302-072-10
Warranty Deed: Liber 153 Page 509
That part of the S 1/2 of the SW 1/4 of said section lying S'ly of the center thread of the Au Sable River, and also the portion of the Island located in the SW 1/4 SW 1/4 of said section 2 which lies N'ly of said center thread.

001-310-001-10
Warranty Deed: Liber 153 Page 509
The NE 1/4 of the NW 1/4 and the NE 1/4 of said Section 10, all lying S'ly of the center thread of the Au Sable River; and also any islands or portions of islands located in the NE 1/4 of said section which lie N'ly of said center thread; except a strip of land 330 feet wide across the W 1/2 of Section 10 and the SW 1/4 of Section 3, T26N, R2E, the E'ly and NE'ly line of said strip being 115 feet E'ly and 115 feet NE'ly of the survey center line of an existing transmission line, described as follows: To find the plans of beginning of this description, commence at the SW corner of said Section 11, run thence N 89 degrees 50 minutes E

along the S line of said section 1,547.80 feet to the survey center line of an existing transmission line and the place of beginning of this description, thence N 0 degrees 20 minutes 54 seconds W along and said survey center line 2.239 feet, thence N 63 degrees 40 minutes 54 seconds W along said center line 4,574 feet, thence N 43 degrees 59 minutes 54 seconds W along said center line approximately 2,537 feet to the S'ly bank of Hio Pond on the Au Sable River, thence continuing N 43 degrees 59 minutes 54 seconds W along said center line to the center thread of said river and the place of ending of this description; and further excepting that portion of the NE 1/4 of the NW 1/4 of section 10, lying SW'ly of the previously described fee exception.

001-311-001-10
Warranty Deed: Liber 153 Page 209
That part of the W 1/2 of said section 11 lying S'ly of the center thread of the Au Sable River; and also any islands or portions of islands located in the W 1/2 of said section 11 which lie N'ly of said center thread; excepting from this description the South 30 acres of the SW 1/4 of the SW 1/4 of said Section 11, and also excepting a strip of land 330 feet wide across the W 1/2 of Section 11, the NE 1/4 and NE 1/4 of the NW 1/4 of Section 10 and the SW 1/4 of Section 3, T26N, R2E, the E'ly and 115 feet NE'ly of the survey center line of an existing transmission line, described as follows: To find the place of beginning of this description, commence at the SW corner of said Section 11, run thence N 89 degrees 58 minutes E along the S line of said section 1,547.80 feet to the survey center line of an existing transmission line and the place of beginning of this description, thence N 0 degrees 20 minutes 54 seconds W along said survey center line 2,239 feet, thence N 63 degrees 40 minutes 54 seconds W along said center line approximately 2,537 feet to the S'ly bank of Mio Pond on the Au Sable River, thence continuing N 43 degrees 59 minutes 54 seconds W along said center line to the center thread of said river

001-304-018-10
Warranty Deed: Liber 153 Page 509
Section 4 The S 1/2 of said section 4 lying S'ly of the center thread of the Au Sable River, and also any islands
located N'ly of the center thread of the Au Sable River within said section 4.

001-303-011-10
Warranty Deed: Liber 153 Page 509
Section 3 The E 1/2 of the SW 1/4 and W 1/2 of the SE 1/4 of said Section 3, all lying S'ly of the center thread of the Au Sable River; and any islands located within Section 3 which lie N'ly of said center thread, except a strip of land 330 feet wide across the W 1/2 of Section 11, the NE 1/4 and the NE 1/4 of the NW 1/4 of Section 10 and the SW 1/4 of Section 3, T26N, R2E, the E'ly and NE'ly line of said strip being 115 feet E'ly and 115 feet NE'ly of the survey center line of an existing transmission line, described as follows: To find the place of beginning of this description, commence at the SW corner of said Section 11, run thence N 89 degrees 55 minutes E along the S line of said section 1,547.50 feet to the survey center line of an existing transmission line and the piece of beginning of this description, thence N 0 degree 20 minutes 54 seconds W along said survey center line 2,239 feet, thence N 63 degrees 40 minutes 54 seconds W along said center line 4,574 feet, thence N 43 degrees 59 minutes 54 seconds W along said center line approximately 2,537 feet to the S'ly bank of Mio Pond on the Au Sable River, thence continuing N 43 degrees 59 minutes 54 seconds W along said center line to the center thread of said river and the place of ending of this description; and further excepting that portion of said section 3 lying SW'ly of the previously described fee exception.

68-001-302-072-00
Easement: Liber 15 Page 426
T26N R2E SEC 02 - L987 SPLITS l/2 OF SW 1/4 EXC S 375' OF N 865' LYING E OF MlO POND. AND EXC LD IN S 1/2 OF SW 1/4 LYlNG S'L

68-001-303-032-00
Easement: Liber 15 Page 426
The Southeast quarter of the Northeast quarter, northeast quarter of the Southeast quarter, Northwest quarter of the Southeast quarter, Southwest quarter of the Northeast quarter, Northeast quarter of the Northwest quarter, Southeast quarter of the Northwest quarter Northeast quarter of the Southwest quarter, southwest quarter of the Northwest quarter, Northwest quarter of the Northwest quarter, all on Section twenty-four (24); the Southwest quarter of the Southwest quarter of Section thirteen (13); the Southeast quarter of the Southeast quarter, Southwest quarter of the Southeast quarter, Southeast quarter of the Southwest quarter, Southwest quarter of the Southwest quarter all on Section fourteen (14); the Northeast quarter of the Northeast quarter, Northwest quarter of the Northeast quarter, Southeast quarter of the Northeast quarter, Southwest quarter of the Northeast quarter, North half of the Southeast quarter of the Northwest quarter, North half of the Southwest quarter of the Northwest quarter, all on Section twenty-three (23); the Northeast quarter of the Northeast quarter of Section twenty-two (22); the Southeast quarter of the Southeast quarter, South half of the Northeast quarter of the Southeast quarter, South half of the Northwest quarter of the Southeast quarter, Southwest quarter of the Southeast quarter, Southeast quarter of the Southwest quarter, Northeast quarter of the Southwest quarter, Northwest quarter of the Southwest quarter and the Southwest quarter of the Southwest quarter, of Section fifteen (15); a piece of land in the Northeast comer of the Southeast quarter of the Southeast quarter, measuring forty (40) rods on the west and south aides, containing five (5) acres, more or less, the Northeast quarter of the Southeast quarter, the Southeast quarter of the Northeast quarter, the Southwest quarter of the Northeast quarter, the North west quarter of the Southeast quarter, the Northeast quarter of the Southwest quarter, the Southeast quarter of the Northwest quarter, the Northeast quarter of the Northwest quarter, The Northwest quarter of the Northwest quarter, the Southwest quarter of the Northwest quarter and the Northwest quarter of the Southwest quarter, of Section Sixteen (16); the Southeast quarter of the Northeast quarter, Northeast quarter of the Northeast quarter, Northwest quarter of the Northeast quarter, Southwest quarter of the Northeast quarter, Southeast quarter of the Northwest quarter, Northeast quarter of the Northwest quarter, Northwest quarter of the Northwest quarter, Southwest quarter or the Northwest quarter, all on Section seventeen (17); the Southeast quarter of the Southwest quarter of Section eight (8) the Southeast quarter of the Northeast quarter and the Northeast quarter of the Northeast quarter, the Northwest of the Northeast quarter, the Southeast quarter of the Northwest quarter, all on Section eighteen (18); the Southwest, on the Southeast quarter , Northeast quarter of the Southwest quarter, Northwest quarter of the of the Southwest quarter, Southwest quarter of the Southwest quarter, all on Section seven (7). All in Township twenty-six (26) North, Range four (4) East. The riparian and flowage rights only on the entire Southeast quarter of Section nine (9) the Southeast quarter of the Northeast quarter and the Northeast quarter of the Southeast quarter of Section eleven (11); the entire Northeast quarter, the South half of the Northwest quarter, and the Northeast quarter of the Southeast quarter of Section twelve (12); and all or the land South of the Au Sable River lying in the Northwest quarter of the Southeast quarter of Section eleven (11) that may be overflowed by raising the water of the Au Sable River not exceed five (5) feet above the natural low water mark as indicated by low-water mark of abutment of Winton Bridge; all in Township twenty-six (26) North, Range three (3) East. The Northeast quarter of the Northwest quarter of Section twelve (12); the Southeast quarter of the Southeast quarter, the Southeast quarter of the Southwest quarter, and the Southeast quarter of the Southwest quarter of Section ten (10); the Southeast quarter of the Southwest quarter, the Northeast quarter of the Southwest quarter, the Northwest

quarter of the Southwest quarter, and the South west quarter of the Southwest quarter of Section Nine (9); the Southeast quarter of the southwest quarter of Section Four (4); the Southeast quarter of the Southeast quarter the North-east quarter of the Southeast quarter, the Northwest quarter of the Southeast quarter, the Southwest quarter of the South-east quarter or the Southwest quarter, the Northeast quarter of the Southwest quarter, the South-east quarter or the Northwest quarter, the Northwest quarter of the Northwest quarter, the South-west quarter of the Northwest quarter, the East quarter of the Northwest quarter of the South-west quarter, and the east quarter of the Southwest quarter of the Southwest quarter, all on Section eight (8); the Northeast quarter of the Northeast quarter, the Southeast quarter of the Northeast quarter, the Southwest quarter of the Northeast quarter, the Northwest quarter of the Northeast quarter, the Northeast quarter of the Northwest quarter and the east quarter of the North west quarter of the Northwest quarter, all on Section seventeen (17), the Northwest quarter of the Northwest quarter, the southwest quarter of the Northeast quarter, the Southeast quarter of the Northwest quarter, and the Southwest quarter of the Northwest quarter, North of River, all on Section seven (7); all in Township twenty-six (26) North, Range three (3) East. The Southwest quarter of the Northeast quarter, the North half of the Northwest quarter of the Southeast quarter the Southeast quarter of the Northwest quarter, the Northeast quarter of the Northwest quarter, the Northwest quarter of the Northwest quarter, and the Southeast quarter of the Northwest quarter, all on Section twelve (12); the Northeast quarter of the Northeast quarter, the Southeast quarter of the Northeast quarter, of the Southwest quarter of the Northeast quarter, the Northwest quarter of the Northeast quarter, the East quarter three-quarters of the Southeast quarter of the Northwest quarter, the West half of the Southwest quarter of the Northwest quarter, the east half of the Southeast quarter of the Southwest quarter, of Section eleven (11); the Northeast quarter of the Northwest quarter of Section ten (10); the Southeast quarter of the Southeast quarter, the Southwest quarter of the Southeast, the Northwest quarter of the Southeast quarter the Southwest quarter of the Southwest quarter, and all that part of the North half of the Southwest quarter lying South of the Au Sable River, all that on Section (3); the Southeast quarter of the Southeast quarter, the Northeast quarter, of the Southeast quarter, the Northwest quarter, of the Southeast quarter, the Southwest quarter of the Southeast quarter, the Southeast quarter of the Southwest quarter, the Northeast quarter of the Southwest quarter, the Northwest quarter of the Southwest quarter, and the Southwest quarter of the Southwest quarter, all on Section four (4); the Northeast quarter of the Southeast quarter, the Southeast quarter, the Northeast quarter, and the Northwest quarter of the Southeast quarter, all on Section five (5); all in Township twenty six (26) North, Range two (2) East. The South half of Southwest quarter of Section two (2), North half of Southwest quarter, lying North of Au Sable River, and Southeast quarter of Southwest quarter of Section three (3), entire Northeast quarter of Section ten (10), North half of Northwest quarter, Northeast quarter of Southwest quarter, and entire Southeast quarter of Section eleven (11) North half of Southwest quarter and Southwest quarter of Southwest quarter of Section twelve (12); also that part of the Southeast quarter of the Northwest quarter of Section three (3) in Township twenty-six (26) North, Range two (2) East, which will be flowed or flooded by reason of the construction and maintenance of the Mio Dam as located a described in the resolution of the Board of Supervisors of Oscoda County, adopted on May 7, 1909, not to exceed seven (7) acres; also the exclusive and perpetual right to flow with the waters of and in the Au Sable River and from any and all of its tributaries by the erection and maintenance of the Mio Dam across said river of the height and at the place mentioned in the permission to construct the same granted by the Board of Supervisors of Oscoda County to the Eastern Michigan Power Company, its successors and assigns, over and upon all the following pieces or parcels of land (not exceeding the acreage hereinafter mentioned in connection with each parcel of land) lying and being in the County of Oscoda and State of Michigan, described as follows: One and one-half(1 1/2) acres on the Southwest quarter of the Southwest quarter of Section one (1), four (4) acres on the Northeast quarter of the Southwest quarter, three (3) acres on the Northwest quarter of Southwest quarter and thirty (30) acres on the South half of the Southeast quarter of Section two (2), all in Township twenty-six (26) North, Range

two (2) East. Part of the descriptions in this paragraph described are SUBJECT to the right, title and interest conveyed by said party of the first part to said party of the second part by deed dated December 1, 1915, and recorded in Oscoda County Registers office on December 24, 1915, in Liber 15 of Deeds, at pages 327 and 328. The exclusive and perpetual right to flow over and upon so much of the Southeast quarter of the Northeast quarter and the Northeast quarter of the Southeast quarter, EXCEPTING one (1) acre in the Southeast comer of said Northeast quarter of the Southeast quarter heretofore deeded to Gideon Cripps, all on Section twelve (12) in Township twenty-six (26) North, Range two (2) East, with the waters of and in the Au Sable River and from any and all of its tributaries as may be flowed by the erection and maintenance of a dam across the Au Sable River at or near the Southeast quarter of the Southwest quarter of Section ten (10), Township twenty-six (26) North, Range two (2) East, Prov-ided such flow will not raise the water in the Au Sable River immediately below the dam now being located on the land hereby conveyed above its natural state or in any manner or to any extent decre-ase the fall of the water in said river over said last mentioned dam. The Northeast quarter of the Southeast quarter, the Northwest quarter of the Southeast quarter, the Southeast quarter of the Southwest quarter, the Northeast quarter of the Southwest quarter, the Nor-thwest quarter, of the Southwest quarter, the Southwest quarter of the Northwest quarter all on Section one (I); the Southeast quarter of the Northeast quarter, the Northeast quarter, of the Northeast quarter, the Northwest quarter of the Northeast quarter, the Southwest quarter, of the Northeast quarter, the Southeast quarter of the Northwest quarter, the Northeast quarter of the Northwest quarter, the Northwest quarter of the Northwest quarter, the South west quarter of the Northwest quarter, and the Northwest quarter of the Southwest quarter, all on section two (2); the Northeast quarter of the Southeast quarter, the Southeast quarter of the North east quarter, the Northeast quarter of the Northeast quarter, the Southwest quarter of the North east quarter, the Northwest quarter of the Southeast quarter, the Southwest quarter of the South east quarter, the Northeast quarter of the Southwest quarter, the Southeast quarter of the North west quarter and the Northwest quarter of the Southwest quarter, all on Section three (3); the Southeast quarter of the Southeast quarter, the Southwest quarter of the Southeast quarter, the Northwest quarter of the Southeast quarter, the Northeast quarter of the Southwest quarter, and the Southeast quarter of the Northwest quarter, all on Section four (4); the Southeast quarter of the Southeast quarter, the Northeast quarter of the Southeast quarter, the Northeast quarter of the Northeast quarter, excepting a plot of land twelve (12) rods square off the Northeast comer sold to Board of Education of the township of Big Creek and Mentor, the North-west quarter of the Northeast quarter, the Southwest quarter of the Northeast quarter, the Northwest quarter of the Southeast quarter, the Southwest quarter of the Southeast quarter, all on Section five (5); the Northeast quarter of the Northwest quarter, and the Southwest quarter of the Northwest quarter of Section eight (8); the Southeast quarter of the Northeast quarter, and the Northeast quarter of the Northeast quarter of Section seven (7); the Southeast quarter of the Southeast quarter, the Southwest quarter of the Southeast quarter, the Southeast quarter of the South west quarter, the Northeast of the Southwest, the Northwest quarter of the Southwest quarter, and the Southwest quarter of the Southwest quarter, all on Section six (6); all in Township twenty-six (26) North, Range one (1); East.

68-001-304-018-50
Easement: Liber 15 Page 426
The South 1/2 of Section 4, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan, excepting therefrom that part of the South 1/2 of said Section 4, lying Southerly of the center thread of the Au Sable River, and also any islands located Northerly of the center thread of the Au Sable River within said Section 4.

68-001-305-002-00
Easement: Liber 15 Page 426

The West 1/2 of the Northeast 1/4, Section 5, Town 26 North, Range 2 East, Big Creek Township, Oscoda County, Michigan.
AND
The Northeast 1/4 of the Southeast 1/4, Section 5, Town 26 North, Range 2 East, excepting therefrom, that part of the Northeast 1/4 of the Southeast 1/4, lying South and Westerly of the center thread of the Au Sable River.
AND
The Southeast 1/4 of the Northeast 1/4, Section 5, Town 26 North, Range 2 East.
AND
The Northwest 1/4 of the Southeast 1/4, Section 5, Town 26 North, Range 2 East.

001-305-012-10
Warranty Deed: Liber 153 Page 509
T26N R2E SEC 5 - NE 1/4 OF SE 1/4 LYING S AND W'LY OF CTR THREAD OF RIVER

Rogers Project

[To be provided]

Tippy Project

Part of 10-016-125-01
Warranty Deed: Liber 251 Page: 181
Section 16, T21N-R13W – The S/2 of the SE/4; AND the NW/4 of the SE/4; AND the SE/4 of the NW/4.

10-017-100-01
Warranty Deed: Liber 510 Page: 1
N 250FT OF N 1/2 OF NE 1/4, EXC TRIANGLE PARCEL BEG ON N+S 1/4 LI, 100FT S OF N 1/4 POST, S 150FT, E 350FT, NWLY TO POB SEC 17 T21N R 13W.

Part of 05-026-100-00
Warranty Deed: Liber: 527 Page: 560
Section 26, T22N-R13W: The W/2 of the NW/4

05-027-100-01
Warranty Deed: Liber: 486 Page: 689
The Entire Section 27, including all islands, T22N-R13W.

10-004-175-00
Warranty Deed: Liber: 397 Page: 895 and Warranty Deed: Liber: 486 Page: 689
Section 4, T21N-R13WThe NE/4 of the NE/4; The SW/4 of the NW/4; Government Lots 1, 7, 8, 9, 10, 11 and Government Lot 2, except the E 40 acres, AND the SE/4 of the NE/4 and the NE/4 of the SE/4 and the E 40 acres of Government Lot 2.

51-05-031-100-00

Warranty Deed: Liber: 551, Page: 625 and Liber: 397, Page: 895
T23N, R13W, MICHIGAN MERIDIAN, EAST DICKINSON TOWNSHIP Section 31: The N 1/2 of the NE 1/4 80.00 acreage ALSO TOWNSHIP TWENTY-TWO NORTH RANGE THIRTEEN WEST MICHIGAN MERIDIAN SECTION THIRTY-ONE Government Lots 1 and 2, containing 61 acres, more or less, and together therewith all appurtenances thereunto belonging or in anywise appertaining.

51-05-033-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 33, Township Twenty-Two North, Range Thirteen West; Government Lots 1 through 11, excepting therefrom the W 1,320 ft. of Government Lot 10 and excepting the W 1,320 ft. of Government Lot 11; and Government Lot 13, and also all islands located within Section 33. The N 1/2 of the S 1/2 of the NW 1/4; also Government Lot 1, excepting the N 660 ft. thereof. AND Section 33, Township 22 North, Range 13 West: Government Lot 12 and the West 13 20 feet of Government Lots 10 and 11.

05-136-200-00
Warranty Deed: Liber: 515, Page: 801, Liber: 486, Page: 689 and Liber: 397, Page: 895
GOVERNMENT LOTS 3,4,5,6,7 & 8 Wl/2 NW 1/4 AND N 1/2 NW 1/4 SW 1/4. 276.45 AMIL SEC 36 T22N Rl4W

05-028-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
ENTIRE SECTION EXC GOVT LOTS 1 & 2 513 .10 A M/L SEC 28 T22N R13W.

05-022-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
ENTIRE SECTION 630.31 AMIL SEC 22 T22N R13W.

Part of 05-015-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 15, Government Lots 1 and 2.

05-023-150-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 23 Government Lots 1 through 6; and the SW1/4 of the NE1/4; and the W1/2 of the SE1/4. A strip of land 30 feet in width across Government Lot 3, Section 23; T22N, R13W, being 15 feet on each side of the centerline of an existing electric distribution line running in a Northeasterly and Southwesterly direction across said land. A strip of land 30 feet in width across Government Lots 4 and 6, Section 23, T22N, R13W, being 15 feet on each side of the centerline of an existing distribution line running in a Northwesterly and Southeasterly direction across said land. A strip of land 30 feet in width across the w 1/2 of the Se 1/4, Section 23, T22N, R13W, being 15 feet on each side of the centerline of an existing electric distribution line running in a Northeasterly and Southwesterly direction across said land.

05-014-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 14, T22N, R13W: The W 1/2 of the SW 1/4 of the SE 1/4 and the W 1/2 of the NW 1/4 and the NE/4 of the SE/4 and the E/2 of the SW/4 of the SE/4 and Government Lots 1 through 9.

05-032-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 32, T22N, R13W: The N/2 AND the NE/4 of the SE/4 AND Government Lots 1 through 7 AND the NE/4 of the SW/4.

05-125-100-01
Warranty Deed: Liber: 515, Page: 801 and Liber: 397, Page: 895
Section 25: The entire section except the NW 1/4 of the NE 1/4 also except Government Lots 1 and 2 and the East 40 acres of Government Lot 3. AND TOWNSHIP TWENTY-TWO NORTH, RANGE FOURTEEN WEST, MICHIGAN MERIDIAN SECTION TWENTY-FIVE: Government Lot one (1); Government Lot Two (2); and the East 40 acres of Government Lot Three (3).

Part of 10-016-125-01
Warranty Deed: Liber 251 Page: 181
Section 16, T21N-R13W – The S/2 of the SE/4; AND the NW/4 of the SE/4; AND the SE/4 of the NW/4.

10-017-100-01
Warranty Deed: Liber 510 Page: 1
N 250FT OF N 1/2 OF NE 1/4, EXC TRIANGLE PARCEL BEG ON N+S 1/4 LI, 100FT S OF N 1/4 POST, S 150FT, E 350FT, NWLY TO POB SEC 17 T21N R 13W.

Part of 05-026-100-00
Warranty Deed: Liber: 527 Page: 560
Section 26, T22N-R13W: The W/2 of the NW/4

05-027-100-01
Warranty Deed: Liber: 486 Page: 689
The Entire Section 27, including all islands, T22N-R13W.

10-004-175-00
Warranty Deed: Liber: 397 Page: 895 and Warranty Deed: Liber: 486 Page: 689
Section 4, T21N-R13WThe NE/4 of the NE/4; The SW/4 of the NW/4; Government Lots 1, 7, 8, 9, 10, 11 and Government Lot 2, except the E 40 acres, AND the SE/4 of the NE/4 and the NE/4 of the SE/4 and the E 40 acres of Government Lot 2.

51-05-031-100-00
Warranty Deed: Liber: 551, Page: 625 and Liber: 397, Page: 895
T23N, R13W, MICHIGAN MERIDIAN, EAST DICKINSON TOWNSHIP Section 31: The N 1/2 of the NE 1/4 80.00 acreage ALSO TOWNSHIP TWENTY-TWO NORTH RANGE THIRTEEN WEST MICHIGAN MERIDIAN SECTION THIRY-ONE Government Lots 1 and 2, containing 61 acres, more or less, and together therewith all appurtenances thereunto belonging or in anywise appertaining.

51-05-033-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 33, Township Twenty-Two North, Range Thirteen West; Government Lots 1 through 11, excepting therefrom the W 1,320 ft. of Government Lot 10 and excepting the W 1,320 ft. of Government Lot 11; and Government Lot 13, and also all islands located within Section 33. The N 1/2 of the S 1/2 of the NW 1/4;

also Government Lot 1 excepting the N 660 ft. thereof. AND Section 33, Township 22 North, Range 13 West: Government Lot 12 and the West 13 20 feet of Government Lots 10 and 11.

05-136-200-00
Warranty Deed: Liber: 515, Page: 801, Liber: 486, Page: 689 and Liber: 397, Page: 895
GOVERNMENT LOTS 3,4,5,6,7 & 8 Wl/2 NW 1/4 AND N 1/2 NW 1/4 SW 1/4. 276.45 AMIL SEC 36 T22N Rl4W

05-028-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
ENTIRE SECTION EXC GOVT LOTS 1 & 2 513 .10 A M/L SEC 28 T22N R13W.

05-022-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
ENTIRE SECTION 630.31 AMIL SEC 22 T22N R13W.

Part of 05-015-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 15, Government Lots 1 and 2.

05-023-150-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 23 Government Lots 1 through 6; and the SW1/4 of the NE1/4; and the W1/2 of the SE1/4. A strip of land 30 feet in width across Government Lot 3, Section 23; T22N, R13W, being 15 feet on each side of the centerline of an existing electric distribution line running in a Northeasterly and Southwesterly direction across said land. A strip of land 30 feet in width across Government Lots 4 and 6, Section 23, T22N, R13W, being 15 feet on each side of the centerline of an existing distribution line running in a Northwesterly and Southeasterly direction across said land. A strip of land 30 feet in width across the w 1/2 of the Se 1/4, Section 23, T22N, R13W, being 15 feet on each side of the centerline of an existing electric distribution line running in a Northeasterly and Southwesterly direction across said land.

05-014-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 14, T22N, R13W: The W 1/2 of the SW 1/4 of the SE 1/4 and the W 1/2 of the NW 1/4 and the NE/4 of the SE/4 and the E/2 of the SW/4 of the SE/4 and Government Lots 1 through 9.

05-032-100-01
Warranty Deed: Liber: 486, Page: 689 and Liber: 397, Page: 895
Section 32, T22N, R13W: The N/2 AND the NE/4 of the SE/4 AND Government Lots 1 through 7 AND the NE/4 of the SW/4.

05-125-100-01
Warranty Deed: Liber: 515, Page: 801 and Liber: 397, Page: 895
Section 25: The entire section except the NW 1/4 of the NE 1/4 also except Government Lots 1 and 2 and the East 40 acres of Government Lot 3. AND TOWNSHIP TWENTY-TWO NORTH, RANGE FOURTEEN WEST, MICHIGAN MERIDIAN SECTION TWENTY-FIVE: Government Lot one (1); Government Lot Two (2); and the East 40 acres of Government Lot Three (3).

Webber Project

34-080-033-000-055-00
Warranty Deed: Liber: 171 Page: 179 & Liber 171 Page 236
A PT OF NE 1/4 DESC AS COM AT N 1/4 COR OF SEC 33, TH S ALG N & S 1/4 LINE 932FT, TH N 89DEG 58MIN E 352.71FT TO POB, TH N 89DEG 58MIN E 100FT, TH S 483.88FT, TH N 81DEG 45MIN W 100FT TO PT S OF POB. TH N TO PT OF BEG. SEC 33-7-5

Part of Parcels:
34-140-004-000-020-10
34-140-004-000-020-20
34-140-004-000-020-30
Deed: Liber: 148 Page: 500
So much of Section 4, T6N-R5W South of Grand River, as would be flowed by raising the water in Grand River twenty-non and 1/2 feet above the present normal surface of Wagar's Pond (Elevation 142.50 Commonwealth Power Company's datum). The point at which said surface is to be taken is at Hunt's Ford on the North and South 1/4 line of Section 33, T7N-R5W, to-wit: Such flowage lands are supposed to contain 51.48 acres, more or less.

34-140-005-000-050-00
Warranty Deed: Liber: 150 Page: 35
SEC 05 TWN 06 RNG 05 SE 1/4 EXC W1/2 OF W1/2 OF SE1/4 SEC 5-6-5

34-140-008-000-005-00
Warranty Deed: Liber: 150 Page: 119
SEC 08 TWN 06 RNG 05 NEFRL 1/4 EXC COM IN NE COR S 208 FT, W 208 FT, N 208 FT, E 208 FT TO POB. ALSO EXC LD OWNED BY CONSUMERS POWER CO. SEC 8-6-5

Part of Parcels:
34-140-008-000-045-01
34-140-008-000-045-10
34-140-008-000-045-20
Warranty Deed: Liber: 171 Page: 179 and Deed found in Tract 28-B42-6
That certain three and forty one hundredths (3-40/100) acres of low ground from the East side of the South 20 acres of the Northwest fraction of the Southwest Quarter of Section 8, Township of Portland, that would be overflowed by the erection of a dam twenty-eight feet high at or near what is known as the Hunt Ford in the Township of Lyons, from medium low water, said flowage being designed by a row of hardwood stakes set by surveyor, reserving the right to grade or fill in above flowage line, and use any part or the whole of said three and forty one hundredths (3-40/100) acres of land.

Part of Parcels:
34-140-008-000-035-00
34-140-008-000-040-02
34-140-008-000-040-03
34-140-008-000-040-04

34-140-008-000-040-05
34-140-008-000-040-06
34-140-008-000-040-08

Warranty Deed: Liber: 148 Page: 479
That certain two and 87/100 acres of low land that would be overflowed by raising the water at or near the Shotwell bridge of the old pond on Section 33 in Lyons Township, lying and being on the following described land: Commencing at the Northwest corner of the Southwest quarter of Section 8 and running thence South to the center of said quarter section; thence East to the West bank of Grand River, thence down along West bank of said River to East line of said Quarter Section; thence North to Northeast corner of said Southwest Quarter; thence West on North line of said Southwest quarter to the Place of Beginning, containing 45 acres, more or less and being a part of the Northwest fraction of the Southwest quarter of Section 8, T6S, R5W.

Part of Parcels:
34-140-008-000-055-10
34-140-008-000-060-00
34-140-008-000-070-10
Warranty Deed: Liber: 150 Page: 19 AND Liber 150: Page: 56
That seven and fifty-seven one-hundredths (7-57/100) acres lying along Grand River on the west twenty-five (25) acres of the Southeast fractional quarter of the Southwest quarter of Section 8, South and East of Grand River, that would be flowed by a dam twenty-eight (28) feet high above low water, said dam being located near the North and South quarter line of Section 33, Town 7 North, Range 5 West. Said seven and fifty-seven one-hundredths (7-57/100) acres also includes land for soaking adjoining said pond level at twenty-eight (28) feet head and within one and one-half (1-1/2) feet vertically above said pond level. Also conveying all right in and to said Grand River adjacent to said above-described premises.
AND
Thirteen and fifty-seven one- hundredths (13-57/100) acres off the East forty (40) acres of the Southeast fraction of the Southwest quarter, and the West forty (40) acres of the Southeast fraction of the Southeast fractional quarter, all in Section 8, Town 6 North, Range 5 West, that would be flowed by raising the water in Grand River twenty-none and one-half (29-1/2) feet above mean low water in said river near the North and South quarter line of Section 33, Town 7 North, Range 5 West. Also conveying all rights in and to said Grand River adjacent to said above-described premises.

Part of Parcels:
34-140-009-000-010-03
34-140-009-000-010-06
34-140-009-000-010-08
34-140-009-000-010-09
34-140-009-000-010-10
34-140-009-000-010-11
34-140-009-000-010-12
34-140-009-000-010-13
34-140-009-000-010-72
34-140-009-000-010-30
34-140-009-000-010-01
34-140-009-000-010-02

34-140-009-000-010-40
34-140-009-000-010-50

Warranty Deed: Liber: 149 Page: 636
All that part of the Northwest fraction and of the Northeast fraction of Section 9, lying North of the River, Town 6 North, Range 5 West, that would be flowed by raising the water in Grand River twenty nine and one half (29 – 1/2) feet above the present normal surface elevation (142.50 Commonwealth Power Company's datum) of the river at Hunt's Ford of the North and South quarter line of Section 33, Town 7 North of Range 5 West, Reserving from above lands a piece of land fifteen rods East and West and Twenty Five rods North and South where the barn and outbuildings are located, subject however, to the right to flow the same; reserving the right to fill in the last described piece of land.

34-140-009-000-015-30
Warranty Deed: Liber: 150 Page: 33
SEC 9-6-5 COM AT W 1/4 COR OF SEC TH S 224 FT, E 238.78 FT, N 505.64 FT TO S BANK OF GRAND RIVER, TH SO WESTERLY ALONG S BANK TO W SEC LINE, TH S 190.19 FT TO POB. SPLIT ON 12/30/2002 INTO 140-009-000-015-10, 140-009-000-015-20, 140-009-000-015-30;

34-140-009-000-045-00
Warranty Deed: Liber: 150 Page: 33
COM ON N&S 1/4 LI 440 FT S OF CEN OF SEC 9, TH W 495 FT, N 1173.48 FT TO A TRAVERSE PT ON S BANK OF GRAND RIVER, S 83 DEG 22 MIN 49 SEC E 166.30 FT ALG SD TRAV LI,S 1032.20 FT, E 329.43 FT, S 125.60 FT ALG N&S 1/4 LI TO POB EXC LD OWNED BY POWER CO. SEC 9-6-5 5.38 AC

34-140-009-000-050-10
Warranty Deed: Liber: 150 Page: 15
COM 314.4 FT S OF CEN OF SEC 9, TH W 329.43 FT, N 1032.2 FT TO A PT ON TRAV LI ON S BANK OF GRAND RIVER, TH ALG TRAV LINE S 83 DEG 22 MIN 49 SEC E 166.59 FT & S 78 DEG 24 MIN 02 SEC E 166.29 FT TO PT OF ENDING OF SAID TRAVERSE LI, S 01 DEG 15 MIN 14 SEC W 672.09 FT TO POB, EXC LAND OWNED BY CONSUMERS POWER CO L 150 P 15, ALSO EXC COM S 1 DEG 15 MIN 14 SEC W 148.4 FT OF CENTER OF SEC; TH S 1 DEG 15 MIN 14 SEC W 166 FT ALG N & S 1/4 LI, N 88 DEG 47 MIN 35 SEC W 329.43 FT, N 1 DEG 15 MIN 14 SEC E 166 FT, S 88 DEG 47 MIN 35 SEC E 329.43 FT TO POB SEC 9-6-5 2000 009-050-00

34-140-020-000-035-01
Warranty Deed: Liber: 150 Page: 33
COM AT N&S 1/4 LI 865 FT SLY OF N 1/4 COR, TH S 200 FT ON N&S 1/4 LI, WLY 1180 FT M/L AT RIGHT ANGLES WITH N&S 1/4 LI TO ELY EDGE OF GRAND RIVER, NELY DOWN STREAM ON SD ELY EDGE TO A PT 200 FT NLY OF AS MEASURED AT RIGHT ANGLES TO LAST DESC LI, ELY 1051 FT M/L TO POB SEC 20-6-5

34-140-020-000-035-20
Warranty Deed: Liber: 148 Page: 479
N 37A M/L OF NW 1/4 LYING E OF GRAND RIVER, EXC FLOWAGE RIGHTS, ALSO EXC N 21.4 A & EXC COM 1098 FT S OF N 1/4 POST, TH W 592 FT, S 735 FT, E 592 FT, N 735 FT TO POB SEC 20-6-5 SPLIT ON 01/17/2006 FROM 140-020-000-035-00;

34-140-020-000-040-01
Warranty Deed: Liber: 195 Page: 275
COM AT N 1/4 COR, S 200 FT ON N & S 1/4 LI, W 400 FT AT R/A TO N & S 1/4 LI, S 60 FT PARALLEL TO N & S 1/4 LI, WLY 326 FT M/L TO ELY EDGE OF GRAND RIVER, NELY DOWNSTREAM ON SD ELY EDGE 293 FT TO N SEC LI, ELY 593 FT M/L TO POB. SEC 20-6-5

34-140-020-000-045-00
Warranty Deed: Liber: 195 Page: 275
THE S 37A M/L OF THE NW 1/4 OF SEC LYING E OF GRAND RIVER. EXC LAND DEEDED FOR OVERFLOW PURPOSES. ALSO EXC BEG AT INTERSEC OF N LI OF ABOVE DESC PARCEL AND C/L OF YERGE ROAD, TH S ALG SD C/L 180 FT, W 300 FT, N TO N LI OF S 37A OF NW 1/4, E TO POB ALSO EXC COM AT CEN OF SEC, TH W 210 FT, N 210 FT, E 210 FT, S 210 FT TO POB. SEC 20-6-5

34-140-020-000-065-40
Warranty Deed: Liber: 171 Page: 179 & Liber 171 Page 236
COM AT NW COR OF LOT 1 OF PLAT OF SOLAR HEIGHTS; TH N 48 DEG 31 MIN 47 SEC W 95 FT ALG N PLAT LI, N 66 DEG 21 MIN 38 SEC E 287.21 FT TO PT ON S BNK OF GRAND RIVER, ALG TRAV LI S 54 DEG 52 MIN 53 SEC E 109.66 FT, S 38 DEG 17 MIN 37 SEC W 273.08 FT, N 48 DEG 31 MIN 47 SEC W 150 FT ALG N PLAT LI OF SOLAR HEIGHTS TO POB, INCLUDES LAND BETWEEN TRAV LI & WATERS EDGE SEC 20-6-5 1998 020-065-00

34-140-020-000-065-50
Warranty Deed: Liber: 171 Page: 179 & Liber 171 Page 236
COM ON N LI OF PLAT OF SOLAR HEIGHTS N 48 DEG 31 MIN 47 SEC W 95 FT FROM NW COR OF LOT 1; TH N 48 DEG 31 MIN 47 SEC W 192 FT ALG N LI OF SD PLAT, N 41 DEG 28 MIN 13 SEC E 277.03 FT TO PT ON S BNK OF GRAND RIVER, ALG TRAV LI S 39 DEG 39 MIN 43 SEC E 194.32 FT & S 54 DEG 52 MIN 53 SEC E 121.63 FT, TH S 66 DEG 21 MIN 38 SEC W 287.21 FT TO POB, INCLUDES LAND BETWEEN TRAV LI AND WATERS EDGE SEC 20-6-5 1998 020-065-00

34-140-020-000-125-02
Warranty Deed: Liber: 171 Page: 179 & Liber 171 Page 236
COM CEN OF SEC TH S 89D 39 M 56 S W 1028.52 FT, S 30 FT TO POB, S 763.49 FT,W 1092.16 FT TO GRAND RIVER, NLY ALG RIVER TO E & W 1/4 LI N 89 DEG 39 M 56 S E TO POB SEC 24-6-5
34-140-040-000-020-00
Warranty Deed: Liber: 171 Page: 179
CE Fee
Grand Ridge Estates Condo
Part of Parcels:
34-140-200-000-004-00
34-140-200-000-005-00
34-140-200-000-006-00
34-140-200-000-007-00
34-140-200-000-008-00
34-140-200-000-009-00
34-140-200-000-010-00

34-140-200-000-011-00
34-140-200-000-012-00
34-140-200-000-013-00
34-140-200-000-014-00
34-140-200-000-015-00
34-140-200-000-016-00
34-140-200-000-017-00
34-140-200-000-018-00
34-140-200-000-039-00
34-140-200-000-040-00
34-140-200-000-041-00
34-140-200-000-042-00
34-140-200-000-043-00
34-140-200-000-044-00
34-140-200-000-045-00

Warranty Deed: Liber: 149 Page: 608 & Liber 149 Page 37
Thirteen and thirteen one hundredths (13 – 13/100) acres of land off from the East side of the following described land and lying below a level line, which level line is twenty-nine and one half (29 - 1/2) feet above the present normal surface of Wagar's Pond (Elevation 142.50 Commonwealth Power Company's datum). The point at which said surface is to be taken on Grand River is at Hunt's Ford on the North and South quarter line of Section 33, Township 7 North, Range 5 West, to wit: Commencing in the center of highway from Portland to Collins eight (8) chains and thirty-five (35) links North of South line of Section 18, Township 6 North, Range 5 West, thence East parallel with South line of said Section 18 and Section 17, Township 6 North, Range 5 West to Grand River, thence upstream to a point about 92 rods North of East and West quarter line of Section 20, Township 6 North, Range 5 West, thence West along North line of Edmund White's land to said highway, thence Northerly to the Place of Beginning.
AND
That certain One and 48/100 (1.48) acres of low land that would be overflowed by raising the water at or near the Shotwell bridge or the Old Ford in Section 33 in Lyons Township, off of the following described land: Beginning at the East quarter post of Section 19, thence North on Section line about 92 rods to the South line of land formerly owned by John Decker; thence East at right angles with the last described line to Grand River; thence up and along said river to the East and West quarter line of Section 20; thence West along said quarter line to the Place of Beginning, containing 16 acres of land, more or less and being on the South end of the West fraction of the Northwest quarter of Section 20 in Township 6 North of Range 5 West.
ELECTRIC PARK:

Part of Parcel Numbers:
34-080-050-000-035-00
34-080-050-000-025-00
34-080-050-000-065-00
34-080-050-000-055-10
34-080-050-000-080-00
34-080-050-000-085-00
34-080-050-000-175-00
34-080-050-000-175-01

34-080-050-000-200-00
34-080-050-000-220-01
34-080-050-000-245-10

Quit Claim Deed: Liber 151 Page: 59
Seventy-three and thirteen one-hundredths (73-13/100) acres from the Southeast fraction of the Southwest Quarter of said Section 33 that would be flowed by a dam not exceeding 29 ½ feet high above mean low water mark in Grand River at or near the center of said Section.

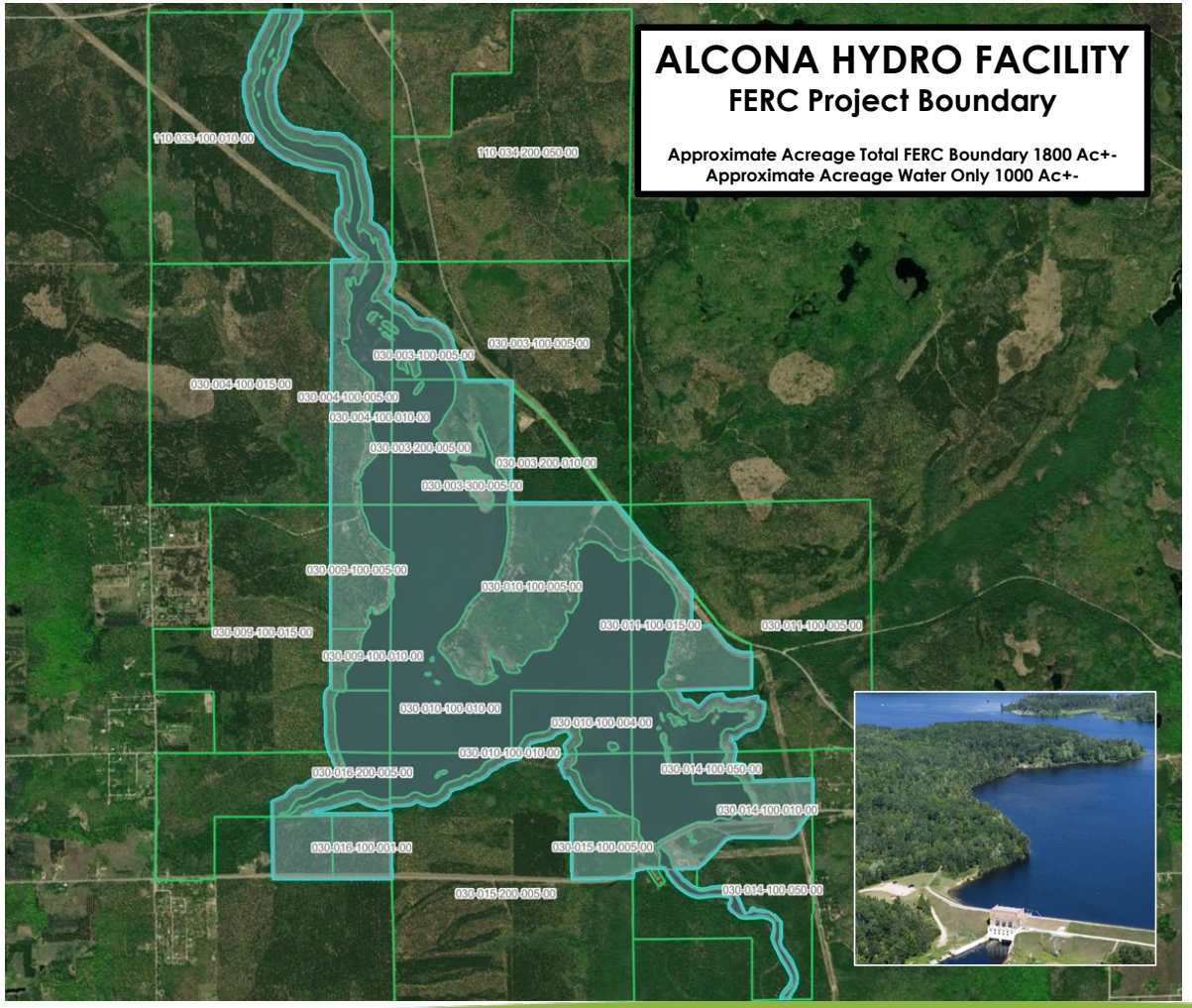
REDACTED

EXHIBIT V

Internal Mapping

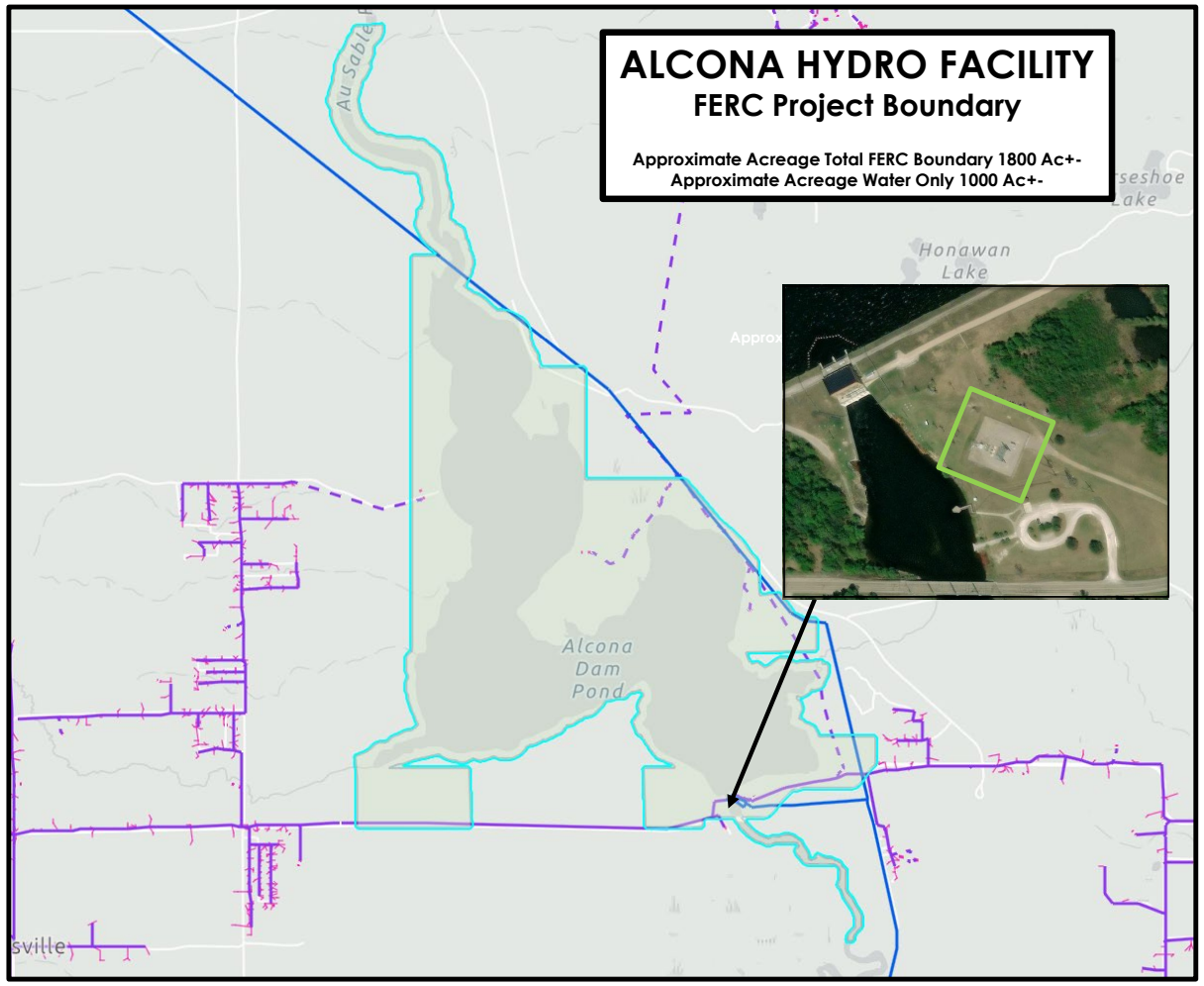
[Attached.]

REDACTED



Tax Parcel #	County	CE Fee/Non Fee
030-003-200-005-00	Alcona	CE fee
030-003-300-005-00	Alcona	CE fee
030-004-100-005-00	Alcona	CE fee
030-004-100-010-00	Alcona	CE fee
030-009-100-005-00	Alcona	CE fee
030-009-100-010-00	Alcona	CE fee
030-010-100-005-00	Alcona	CE fee
030-010-100-010-00	Alcona	CE fee
030-011-100-010-00	Alcona	CE fee
030-011-100-015-00	Alcona	CE fee
030-014-100-010-00	Alcona	CE fee
030-015-100-005-00	Alcona	CE fee
030-016-100-001-00	Alcona	CE fee
030-016-100-005-00	Alcona	CE fee
River parcel in Sec 14, T25N, R5E	Alcona	Non CE fee
030-003-100-005-00	Alcona	Non CE fee
030-004-100-015-00	Alcona	Non CE fee
030-009-100-015-00	Alcona	Non CE fee
030-010-100-004-00	Alcona	Non CE fee
030-011-100-005-00	Alcona	Non CE fee
030-014-100-050-00	Alcona	Non CE fee
030-015-200-005-00	Alcona	Non CE fee
030-016-200-005-00	Alcona	Non CE fee
110-033-100-010-00	Alcona	Non CE fee
110-034-200-050-00	Alcona	Non CE fee

Continued Next Sheet

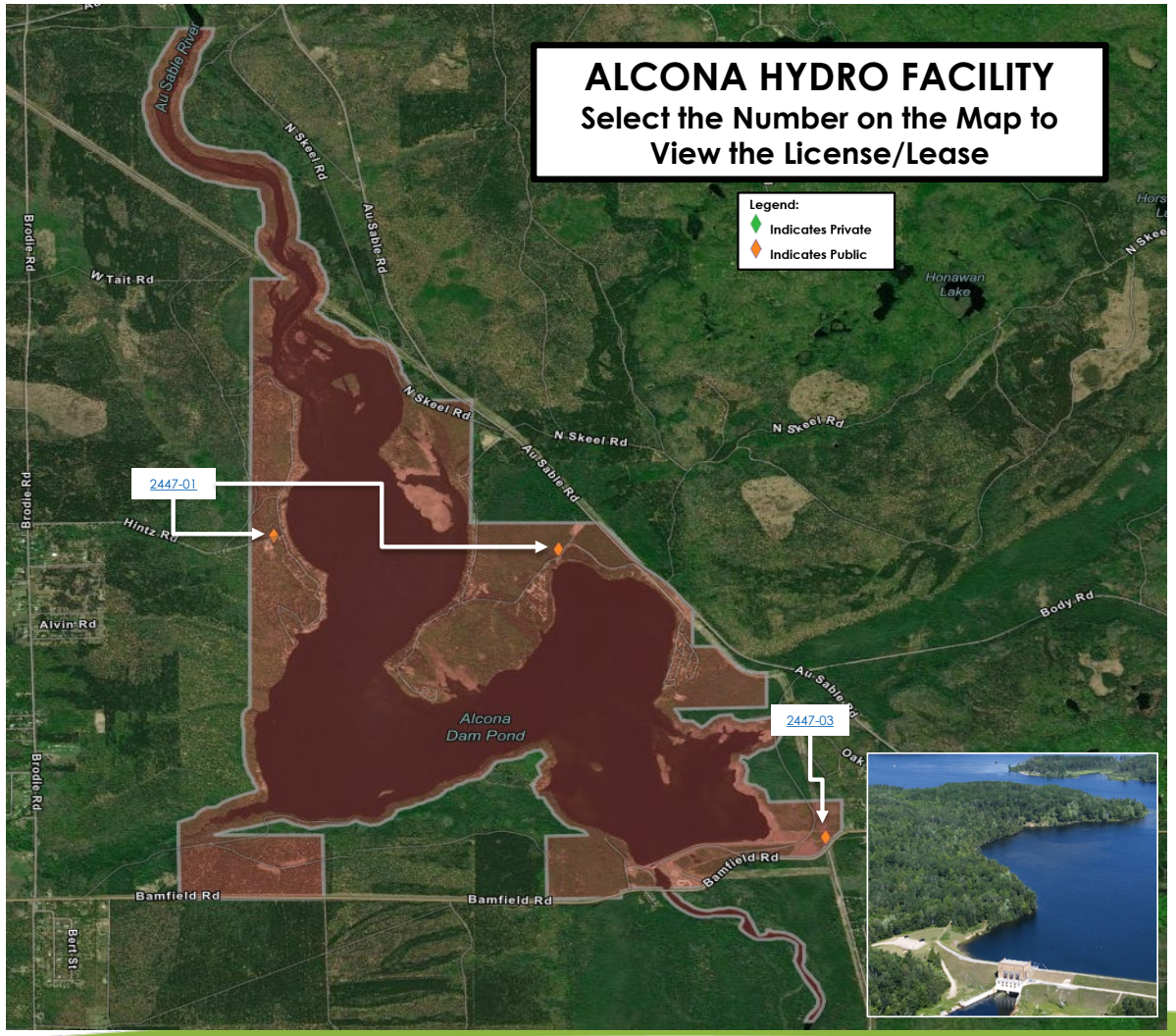


LEGEND:

- Indicates High Voltage Distribution 138 kv
- Indicates High Voltage Distribution 76 kv
- Indicates High Voltage Distribution 46 kv
- Indications Primary Overhead Low Voltage Distribution
- Indicates Primary Underground Distribution
- Indicates Secondary Overhead Distribution
- Indicates Secondary Underground Distribution
- Indicates Reserved Easement for Substation approx. 2 Acres

Continued Next Sheet

REDACTED



ALCONA HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
2447-01	Campground	Public	Lease
2447-03	Trail	Public	License

REDACTED

ALLEGAN HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

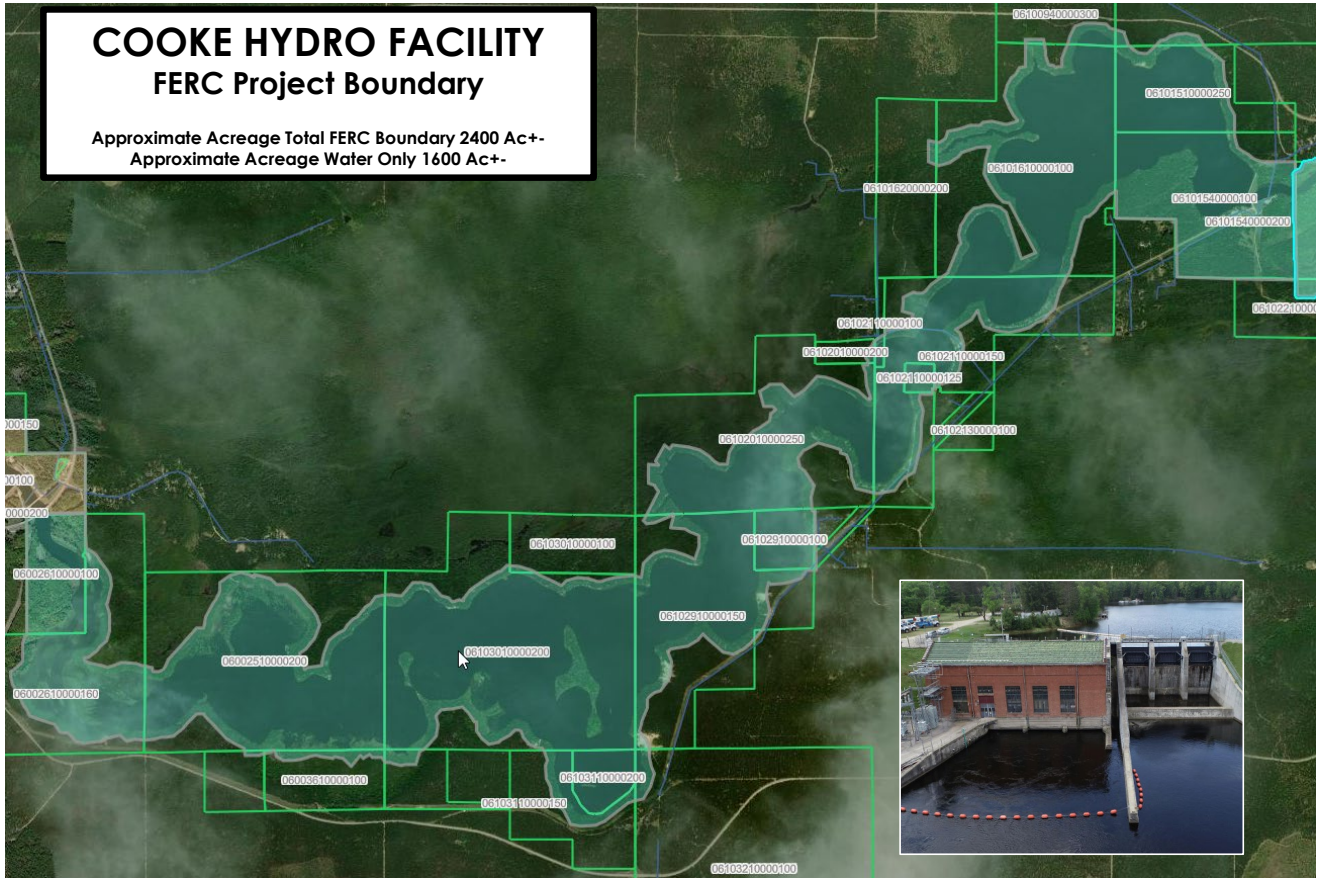
Tax Parcel #	County	CE Fee/Non Fee
03-22-024-009-00	Allegan	CE fee
03-51-100-009-00	Allegan	CE fee
03-51-100-010-00	Allegan	CE fee
03-51-100-011-00	Allegan	CE fee
03-51-105-262-00	Allegan	CE fee
03-51-105-263-00	Allegan	CE fee
03-51-105-265-00	Allegan	CE fee
03-51-105-269-00	Allegan	CE fee
03-51-200-001-00	Allegan	CE fee
03-51-200-002-00	Allegan	CE fee
03-51-200-018-00	Allegan	CE fee
03-51-200-019-00	Allegan	CE fee
03-51-200-067-00	Allegan	CE fee
22-water T2N, R14W Sec 15, 14, 13	Allegan	Non CE fee
51-water T2N, R3W, Sec 20, 28	Allegan	Non CE fee
51-? T2N, R13W, Sec 21, 28	Allegan	Non CE fee
51-105-145-00	Allegan	Non CE fee
51-105-144-00	Allegan	Non CE fee
51-105-142-00	Allegan	Non CE fee
51-200-069-00	Alllegan	Non CE fee
22-015-010-10	Allegan	Non CE fee
22-015-008-00	Allegan	Non CE fee
22-015-009-10	Allegan	Non CE fee
22-013-007-21	Allegan	Non CE fee
01-019-005-80	Allegan	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
01-370-005-00	Allegan	Non CE fee
01-019-026-00	Allegan	Non CE fee
01-021-034-00	Allegan	Non CE fee
51-200-017-00	Allegan	Non CE fee
51-105-139-00	Allegan	Non CE fee
51-215-026-00	Allegan	Non CE fee
51-215-024-00	Allegan	Non CE fee
51-105-264-00	Allegan	Non CE fee
51-105-280-00	Allegan	Non CE fee
51-105-267-00	Allegan	Non CE fee
51-105-136-00	Allegan	Non CE fee
51-280-078-00	Allegan	Non CE fee
51-105-152-00	Allegan	Non CE fee
51-105-260-00	Allegan	Non CE fee
51-280-079-00	Allegan	Non CE fee
51-105-259-00	Allegan	Non CE fee
51-200-072-00	Allegan	Non CE fee
51-280-085-00	Allegan	Non CE fee
51-280-080-00	Allegan	Non CE fee
51-280-115-00	Allegan	Non CE fee
51-100-008-00	Allegan	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

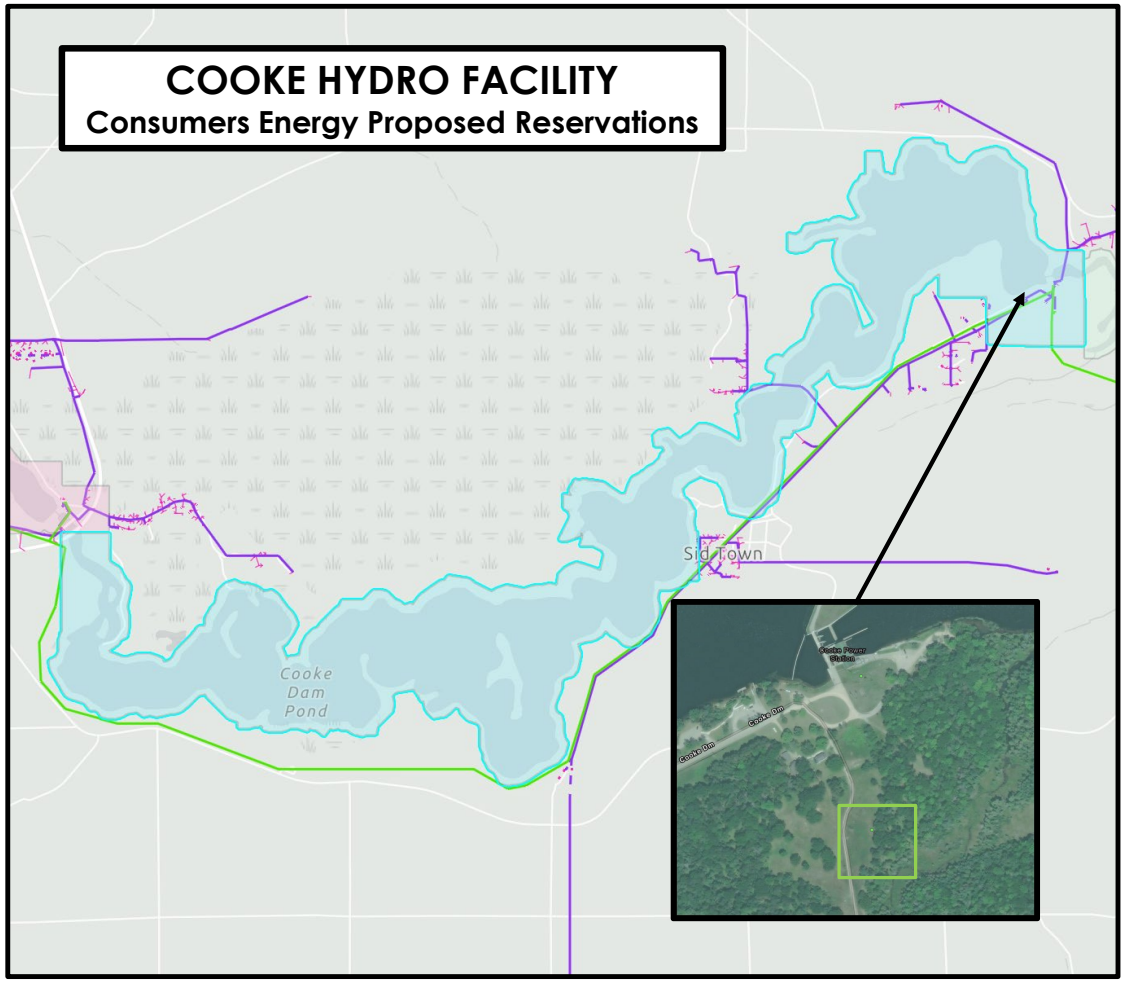
Continued Next Sheet

REDACTED



Tax Parcel #	County	CE Fee/Non Fee
060-026-100-001-00	Iosco	CE fee
061-015-400-001-00	Iosco	CE fee
061-020-100-002-00	Iosco	CE fee
061-021-100-001-00	Iosco	CE fee
061-021-100-001-25	Iosco	CE fee
061-029-100-001-00	Iosco	CE fee
6002510000200	Iosco	Non CE fee
6002610000160	Iosco	Non CE fee
6003610000100	Iosco	Non CE fee
6003620000100	Iosco	Non CE fee
6100940000300	Iosco	Non CE fee
6101010000100	Iosco	Non CE fee
6101510000250	Iosco	Non CE fee
6101540000200	Iosco	Non CE fee
6101610000100	Iosco	Non CE fee
6101620000200	Iosco	Non CE fee
6102010000250	Iosco	Non CE fee
6102110000150	Iosco	Non CE fee
6102130000100	Iosco	Non CE fee
6102910000150	Iosco	Non CE fee
6103010000100	Iosco	Non CE fee
6103010000200	Iosco	Non CE fee
6103110000150	Iosco	Non CE fee
6103110000200	Iosco	Non CE fee
6103210000100	Iosco	Non CE fee

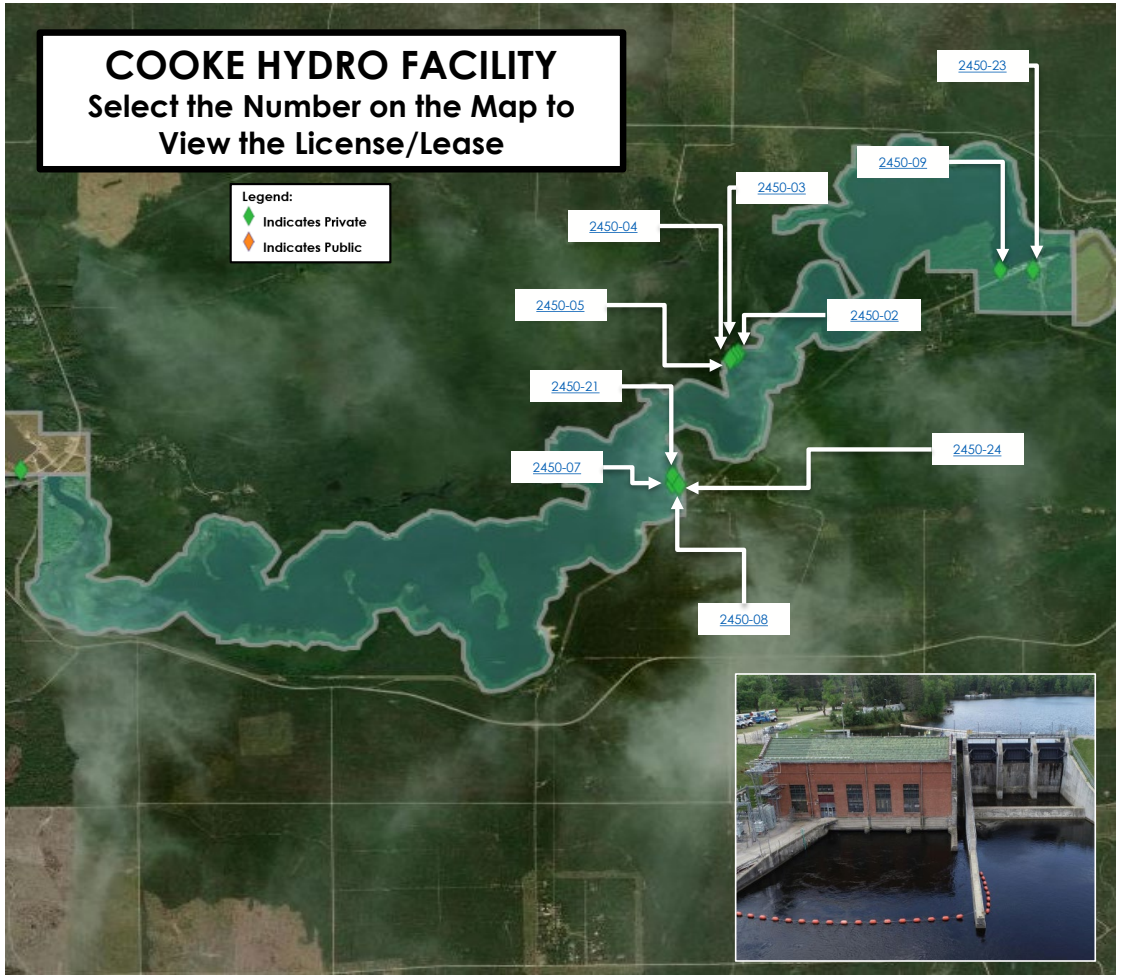
Continued Next Sheet



LEGEND:

- Indicates High Voltage Distribution 138 kv
- Indicates High Voltage Distribution 76 kv
- Indicates High Voltage Distribution 46 kv
- Indications Primary Overhead Low Voltage Distribution
- Indicates Primary Underground Distribution
- Indicates Secondary Overhead Distribution
- Indicates Secondary Underground Distribution
- Indicates Reserved Easement for Substation approx. 3 Acres

Continued Next Sheet



COOKE HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
2450-02	Group Boat Dock	Private	License
2450-03	Group Boat Dock	Private	License
2450-04	Group Boat Dock	Private	License
2450-05	Group Boat Dock	Private	License
2450-07	Group Boat Dock	Private	License
2450-08	Boat Dock	Private	License
2450-09	Group Boat Dock	Private	License
2450-21	Boat Dock	Private	License
2450-23	Landscaping	Private	License
2450-24	Landscaping	Private	License
2450-25	Landscaping	Private	License

REDACTED

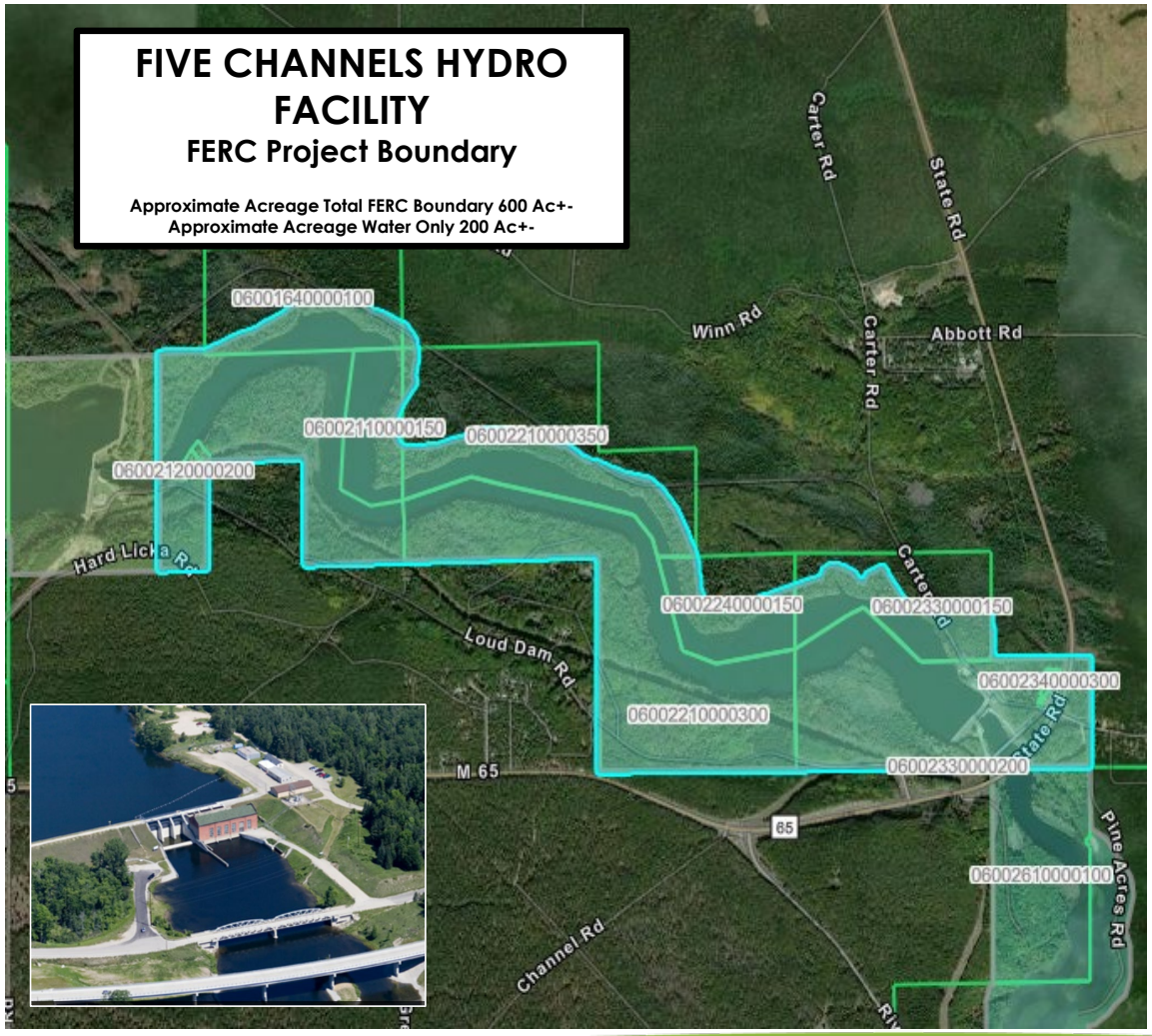
CROTON HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
20-16-200-017	Newaygo	Non CE fee
20-16-200-004	Newaygo	Non CE fee
20-07-200-001	Newaygo	Non CE fee
20-07-100-003	Newaygo	Non CE fee
20-15-100-013	Newaygo	Non CE fee
20-15-100-014	Newaygo	Non CE fee
20-16-200-018	Newaygo	Non CE fee
20-16-200-010	Newaygo	Non CE fee
20-08-400-004	Newaygo	Non CE fee
20-08-400-002	Newaygo	Non CE fee
20-16-200-013	Newaygo	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

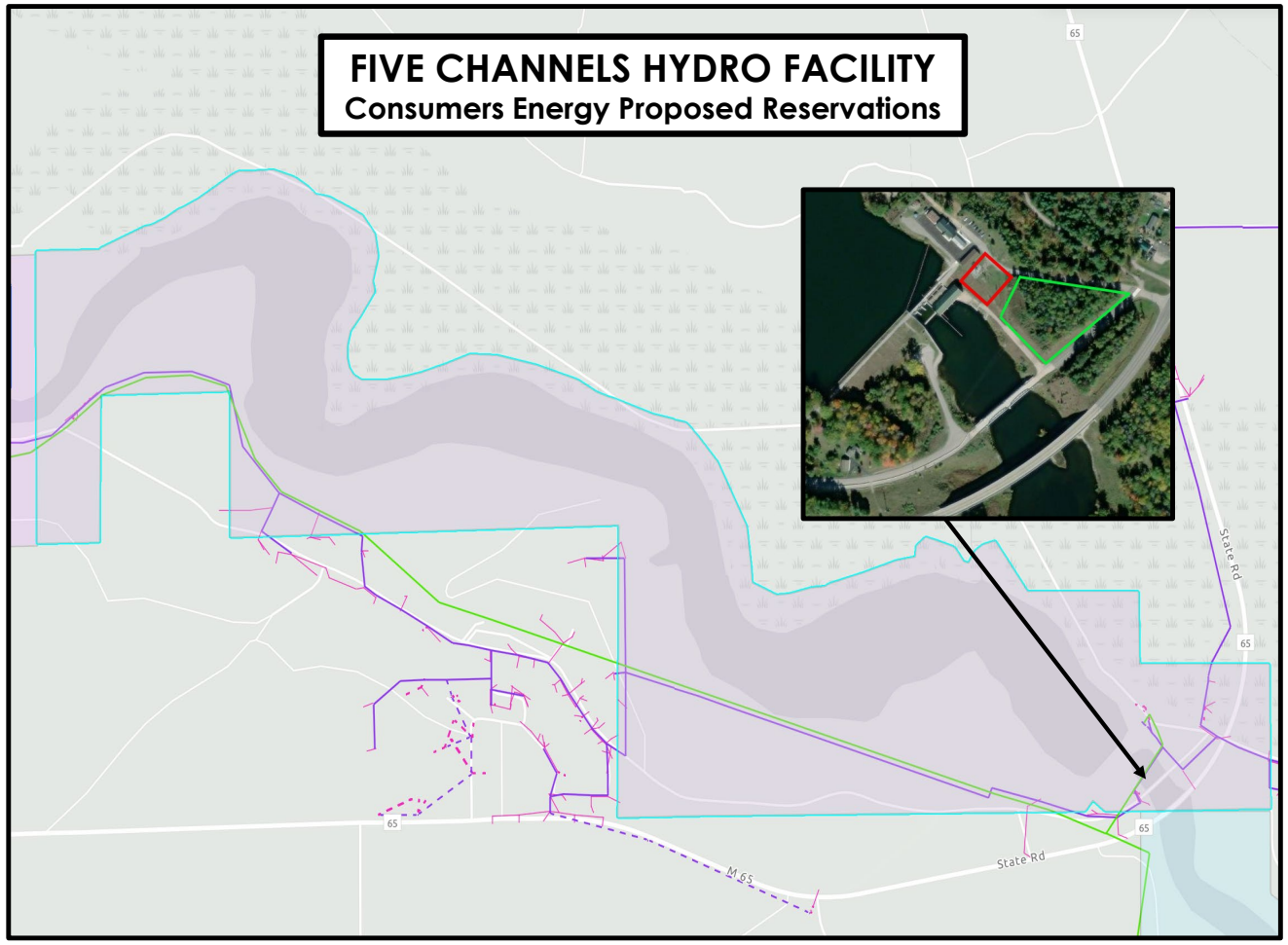
REDACTED



Tax Parcel #	County	CE Fee/Non Fee
060-022-100-003-00	Iosco	CE fee
060-023-300-001-00	Iosco	CE fee
06002340000300	Iosco	Non CE fee
06002340000310	Iosco	Non CE fee
06001640000100	Iosco	Non CE fee
06002110000150	Iosco	Non CE fee
06002120000200	Iosco	Non CE fee
06002120000300	Iosco	Non CE fee
06002120000400	Iosco	Non CE fee
06002210000350	Iosco	Non CE fee
06002240000150	Iosco	Non CE fee
06002330000150	Iosco	Non CE fee
06002330000200	Iosco	Non CE fee

Continued Next Sheet

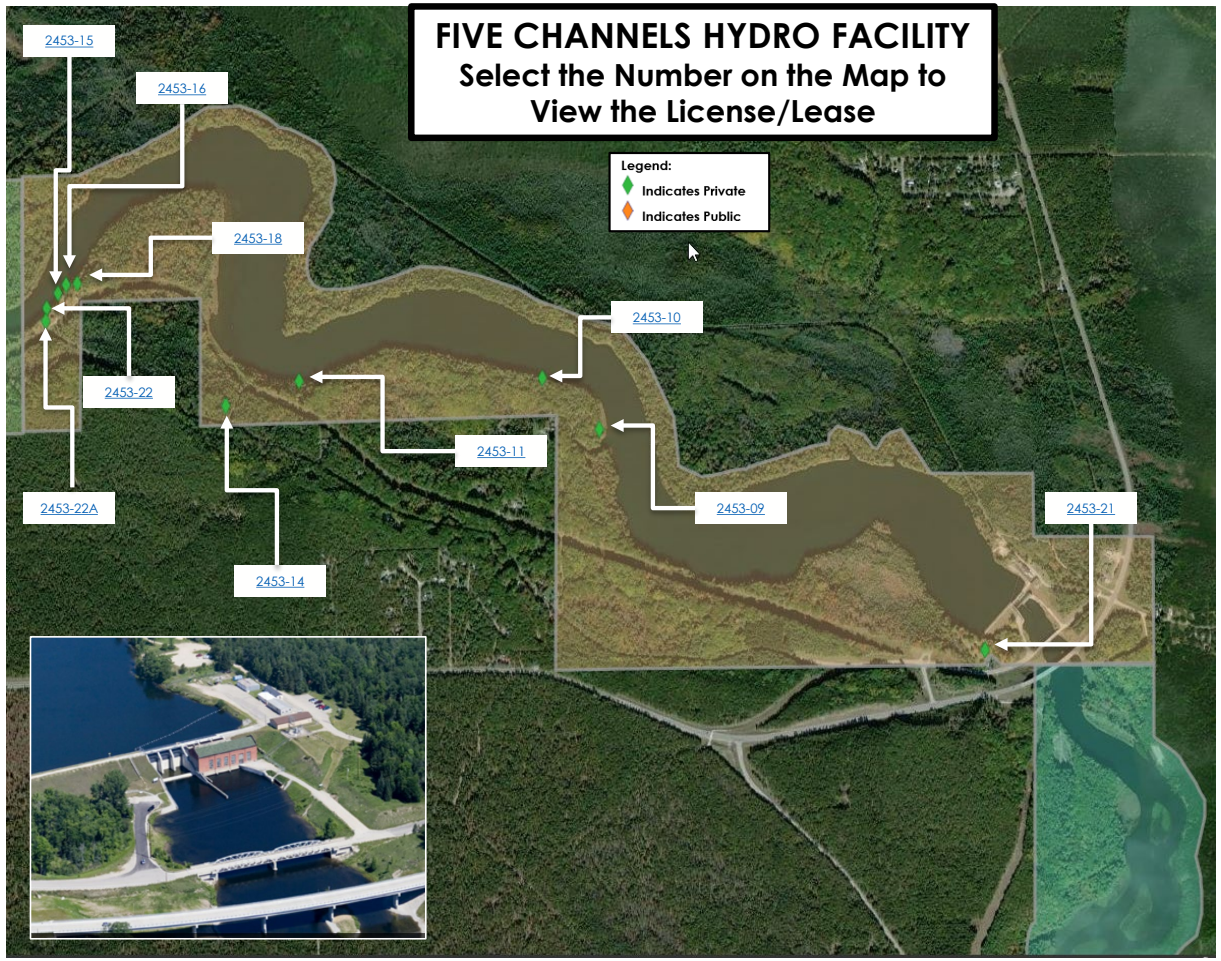
REDACTED



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- Indicates Temporary Substation Easement
- Indicates Reserved Easement for Substation approx. 3 Acres

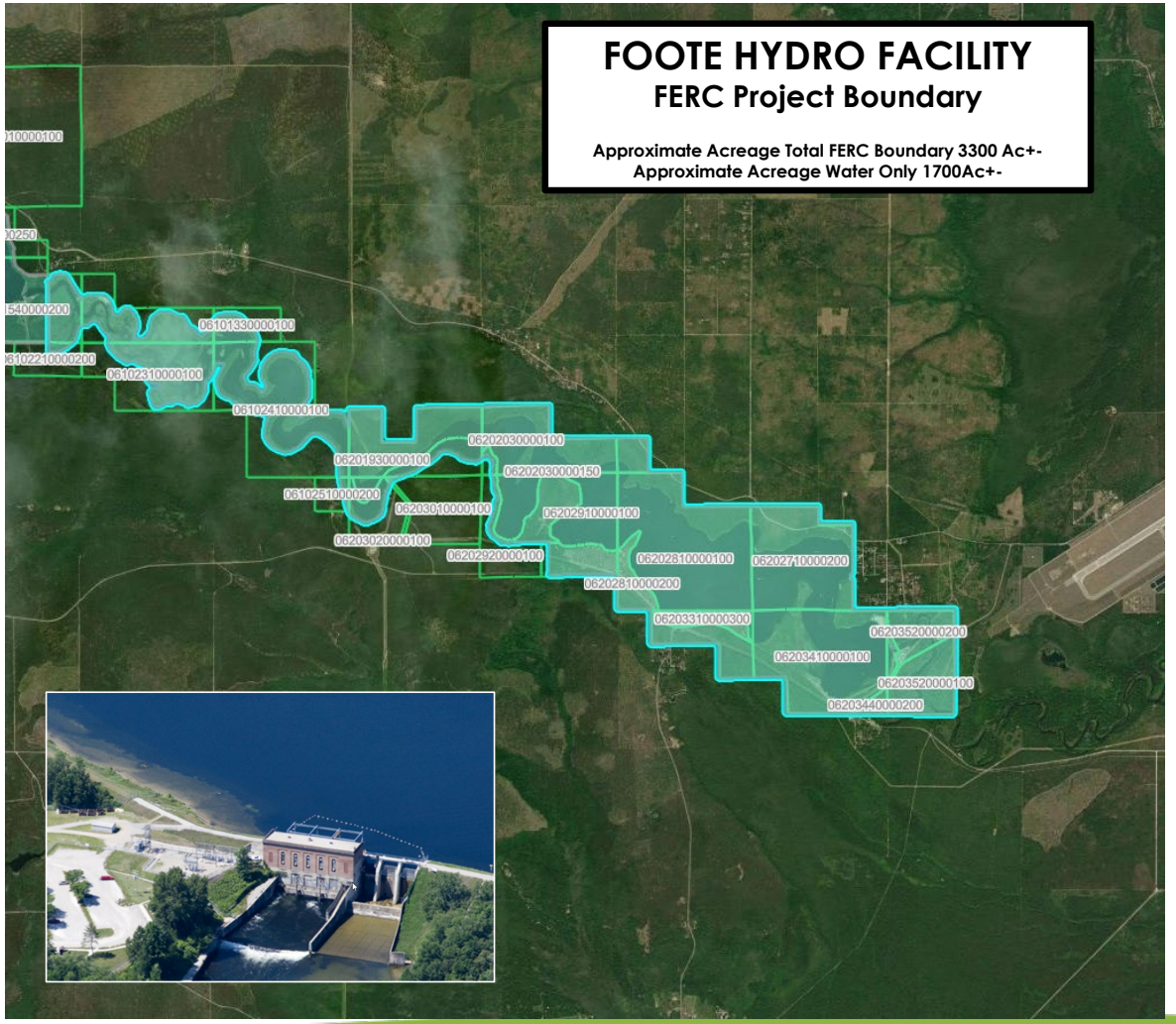
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FIVE CHANNELS HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
2453-09	Group Boat Dock	Private	License
2453-10	Group Boat Dock	Private	License
2453-11	Group Boat Dock	Private	License
2453-14	Cabin Encroachment	Private	License
2453-15	Landscaping	Private	License
2453-16	Boat Dock	Private	License
2453-18	Boat Dock	Private	License
2453-21	Landscaping	Private	License
2453-22	Boat Dock	Private	License
2453-22A	Landscaping	Private	License

REDACTED

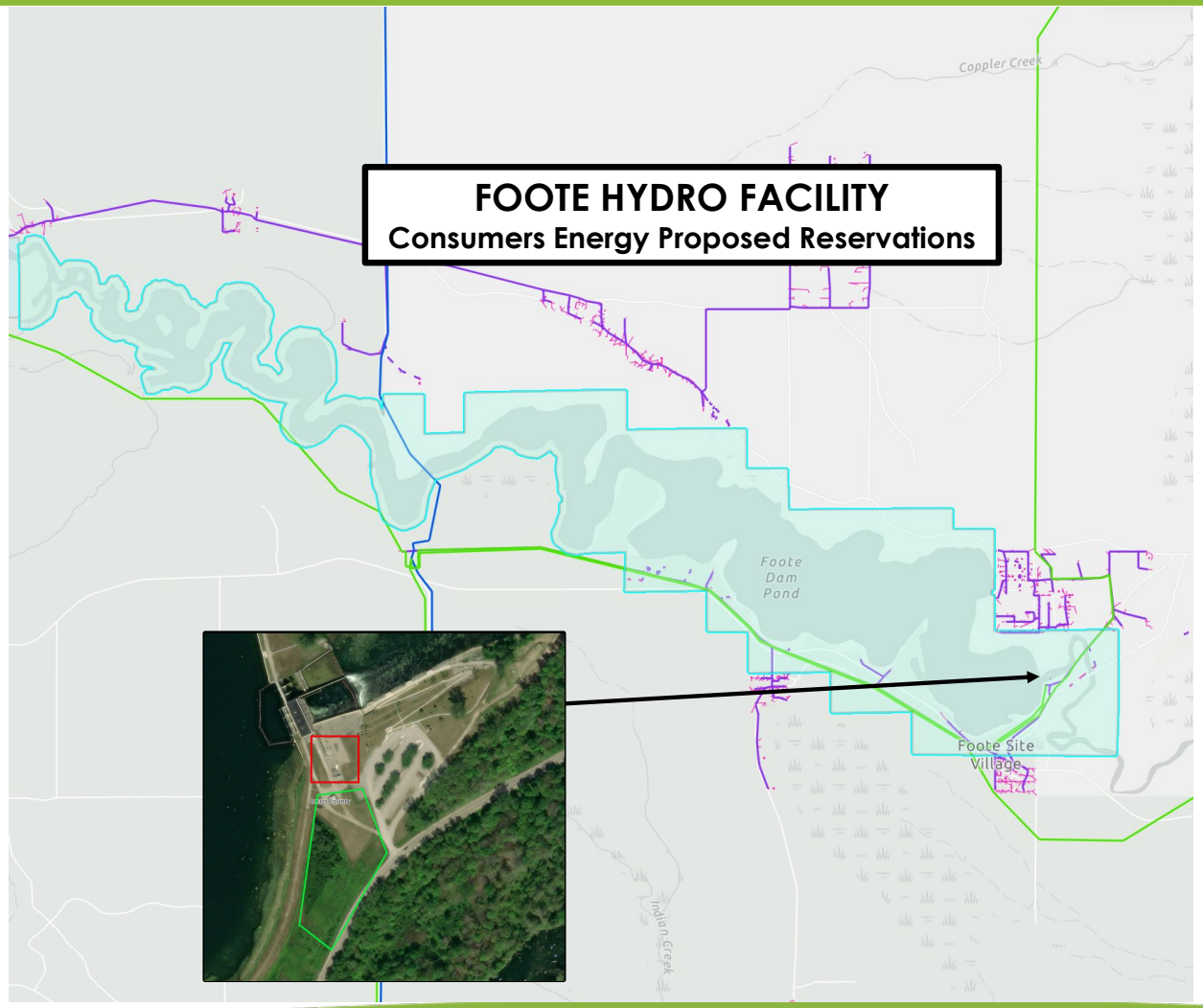


Tax Parcel #	County	CE Fee/Non Fee
062-019-300-001-00	Iosco	CE fee
062-020-300-001-00	Iosco	CE fee
062-020-300-001-50	Iosco	CE fee
062-021-300-001-00	Iosco	CE fee
062-027-100-002-00	Iosco	CE fee
062-028-100-001-00	Iosco	CE fee
062-028-100-002-00	Iosco	CE fee
062-029-100-001-00	Iosco	CE fee
062-029-100-001-50	Iosco	CE fee
062-029-400-001-00	Iosco	CE fee
062-030-200-001-00	Iosco	CE fee
062-033-100-001-00	Iosco	CE fee
062-033-100-003-00	Iosco	CE fee
062-034-100-001-00	Iosco	CE fee
062-034-400-002-00	Iosco	CE fee
062-035-200-001-00	Iosco	CE fee
062-035-200-002-00	Iosco	CE fee
062-035-200-003-00	Iosco	CE fee
06101430000100	Iosco	Non CE fee
06101330000100	Iosco	Non CE fee
06203010000100	Iosco	Non CE fee
06102310000100	Iosco	Non CE fee
06102410000100	Iosco	Non CE fee
06102510000200	Iosco	Non CE fee
06201930000150	Iosco	Non CE fee
06202920000100	Iosco	Non CE fee
06202030000175	Iosco	Non CE fee
06102210000200	Iosco	Non CE fee
06101540000150	Iosco	Non CE fee

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FOOTE HYDRO FACILITY
Consumers Energy Proposed Reservations

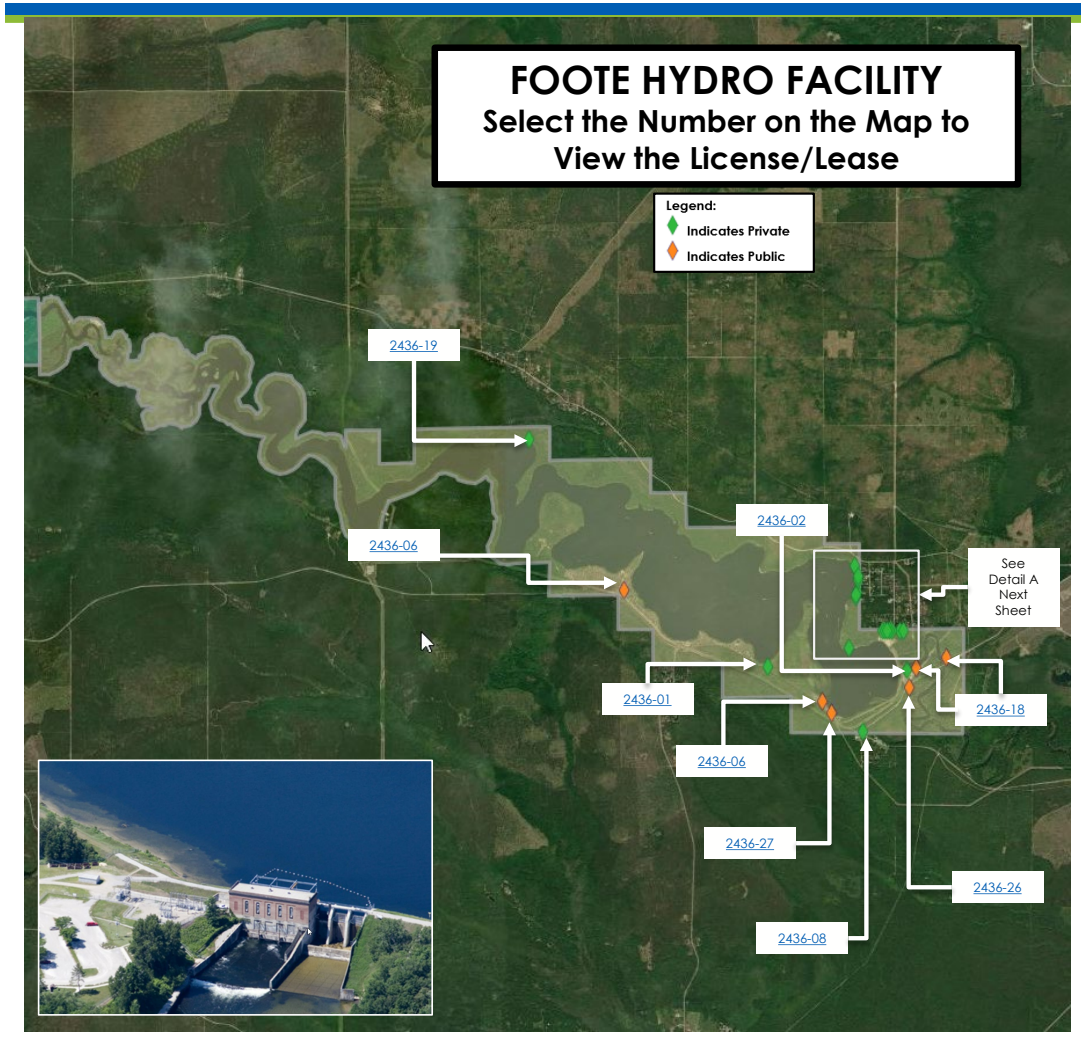


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- Indicates Primary Underground Distribution
- Indicates Secondary Overhead Distribution
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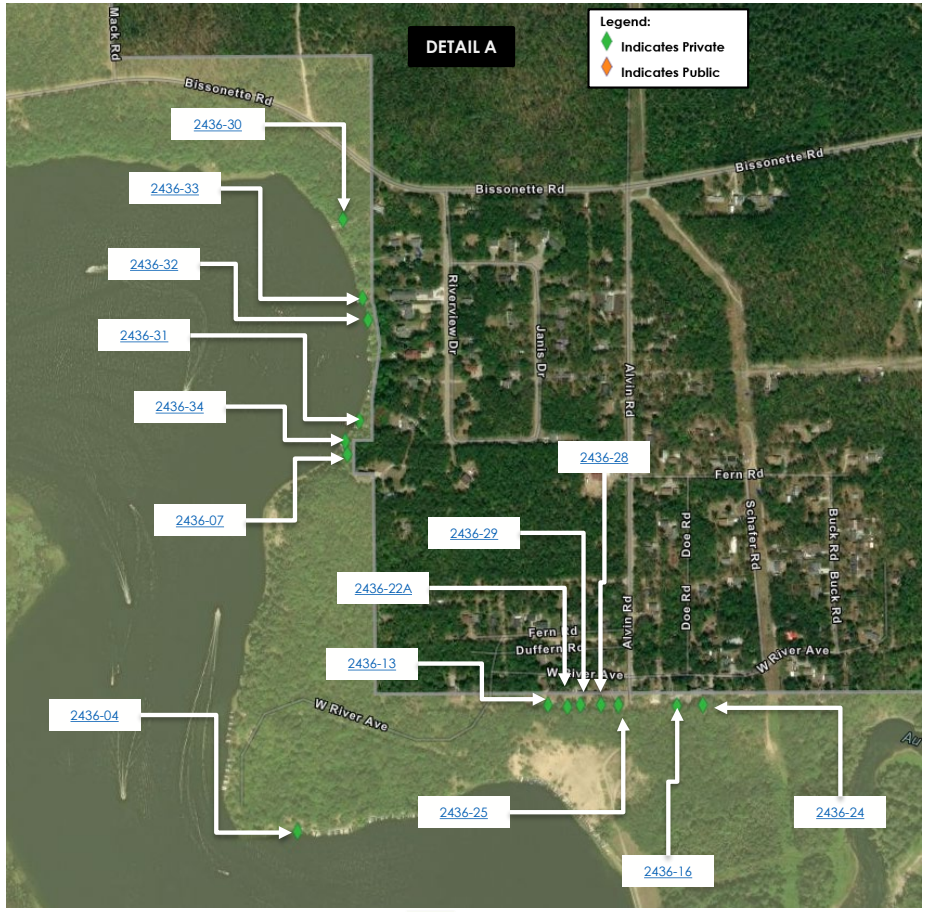
FOOTE HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
2436-01	Education Center	Private	License
2436-02	Government	Private	License
2436-04	Marina	Private	License
2436-06	Campground	Public	Lease
2436-06	Boat Launch	Public	Lease
2436-07	Landscaping	Private	License
2436-08	Parking	Private	License
2436-13	Landscaping	Private	License
2436-16	Landscaping	Private	License
2436-18	Fishing Access	Public	Lease
2436-18	Boat Launch	Public	Lease
2436-19	Marina	Private	License
2436-22A	Landscaping	Private	Lease
2436-24	Landscaping	Private	License
2436-25	Landscaping	Private	License
2436-26	Snowmobile Trail	Public	License
2436-27	Riverboat	Public	License
2436-28	Landscaping	Private	License
2436-29	Landscaping	Private	License
2436-30	Boat Dock	Private	License
2436-31	Boat Dock	Private	License
2436-32	Boat Dock	Private	License
2436-33	Boat Dock	Private	License
2436-34	Group Boat Dock	Private	License

Continued Next Sheet

FOOTE HYDRO FACILITY

Select the Number on the Map to View the License/Lease



REDACTED

HARDY HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
16-01-400-013	Newaygo	CE fee
16-11-400-002	Newaygo	CE fee
16-12-100-001	Newaygo	CE fee
16-12-200-003	Newaygo	CE fee
16-12-300-001	Newaygo	CE fee
16-13-100-001	Newaygo	CE fee
16-13-200-001	Newaygo	CE fee
16-14-300-001	Newaygo	CE fee
16-14-400-001	Newaygo	CE fee
16-15-100-008	Newaygo	CE fee
16-15-200-001	Newaygo	CE fee
16-15-300-001	Newaygo	CE fee
16-15-400-001	Newaygo	CE fee
16-16-400-002	Newaygo	CE fee
16-21-200-002	Newaygo	CE fee
16-21-200-003	Newaygo	CE fee
16-21-400-001	Newaygo	CE fee
16-22-100-001	Newaygo	CE fee
16-22-200-003	Newaygo	CE fee
16-22-400-001	Newaygo	CE fee
16-23-100-001	Newaygo	CE fee
16-23-100-002	Newaygo	CE fee
16-23-200-001	Newaygo	CE fee
16-23-400-002	Newaygo	CE fee
16-23-400-003	Newaygo	CE fee
16-24-100-001	Newaygo	CE fee
16-24-100-002	Newaygo	CE fee

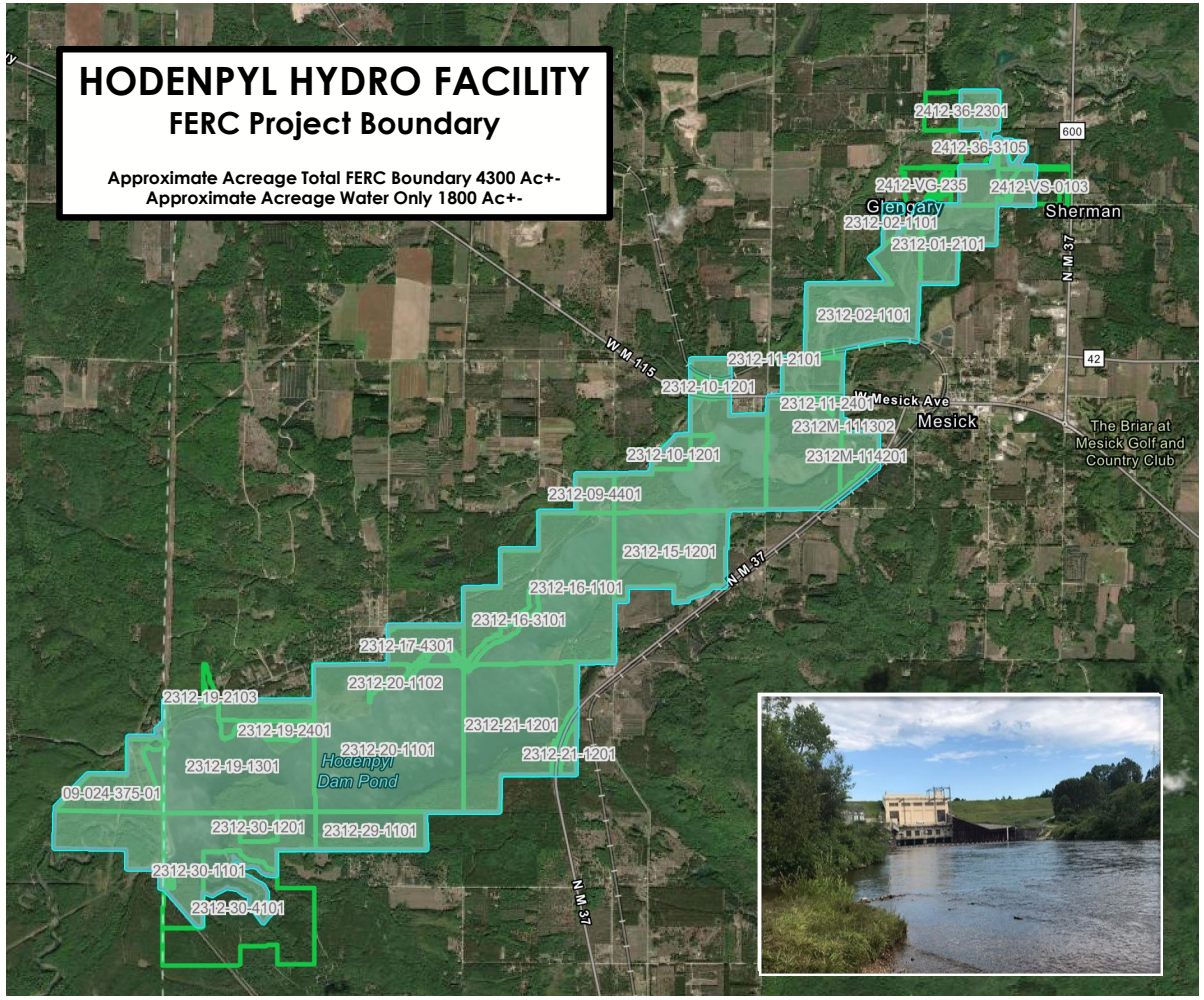
Tax Parcel #	County	CE Fee/Non Fee
16-24-200-002	Newaygo	CE fee
16-27-100-001	Newaygo	CE fee
16-27-100-003	Newaygo	CE fee
16-27-200-004	Newaygo	CE fee
16-27-300-002	Newaygo	CE fee
16-28-100-006	Newaygo	CE fee
16-28-200-002	Newaygo	CE fee
16-28-300-004	Newaygo	CE fee
16-28-400-004	Newaygo	CE fee
16-29-400-011	Newaygo	CE fee
62-70-01-100-001	Mecosta	Non CE fee
09 021 003 500	Mecosta	Non CE fee
09-Muskegon River T14N, R10W Sec 16, 09, 15,	Mecosta	Non CE fee
09 029 001 530	Mecosta	Non CE fee
09 029 001 520	Mecosta	Non CE fee
09 029 010 510	Mecosta	Non CE fee
16-28-400-005	Newaygo	Non CE fee
09 044 005 000	Mecosta	Non CE fee
09 044 004 000	Mecosta	Non CE fee
09 044 006 000	Mecosta	Non CE fee
09 044 003 000	Mecosta	Non CE fee
09 044 001 000	Mecosta	Non CE fee
09 044 002 000	Mecosta	Non CE fee
09 021 005 500	Mecosta	Non CE fee
09 021 005 000	Mecosta	Non CE fee
09 044 010 000	Mecosta	Non CE fee
09 044 011 000	Mecosta	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
09 044 012 000	Mecosta	Non CE fee
09 044 007 000	Mecosta	Non CE fee
09 044 008 000	Mecosta	Non CE fee
09 044 009 000	Mecosta	Non CE fee
09 029 001 175	Mecosta	Non CE fee
09 029 001 275	Mecosta	Non CE fee
09 029 001 285	Mecosta	Non CE fee
09 029 001 300	Mecosta	Non CE fee
09 029 001 500	Mecosta	Non CE fee
09 029 001 600	Mecosta	Non CE fee
09 029 001 400	Mecosta	Non CE fee
09 029 001 150	Mecosta	Non CE fee
09 029 001 100	Mecosta	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

REDACTED



Tax Parcel #	County	CE Fee/Non Fee
51-09-024-375-01	Manistee	CE fee
51-09-025-100-01	Manistee	CE fee
2312-01-2101	Wexford	CE fee
2312-02-1101	Wexford	CE fee
2312-09-4401	Wexford	CE fee
2312-10-1201	Wexford	CE fee
2312-10-4201	Wexford	CE fee
2312-11-2101	Wexford	CE fee
2312-11-2401	Wexford	CE fee
2312-15-1201	Wexford	CE fee
2312-16-1101	Wexford	CE fee
2312-16-3101	Wexford	CE fee
2312-17-4301	Wexford	CE fee
2312-17-4401	Wexford	CE fee
2312-19-1301	Wexford	CE fee
2312-19-2401	Wexford	CE fee
2312-20-1101	Wexford	CE fee
2312-20-1102	Wexford	CE fee
2312-21-1201	Wexford	CE fee
2312-21-2201	Wexford	CE fee
2312-29-1101	Wexford	CE fee
2312-30-1101	Wexford	CE fee
2412-36-2301	Wexford	CE fee
2412-36-3302	Wexford	CE fee

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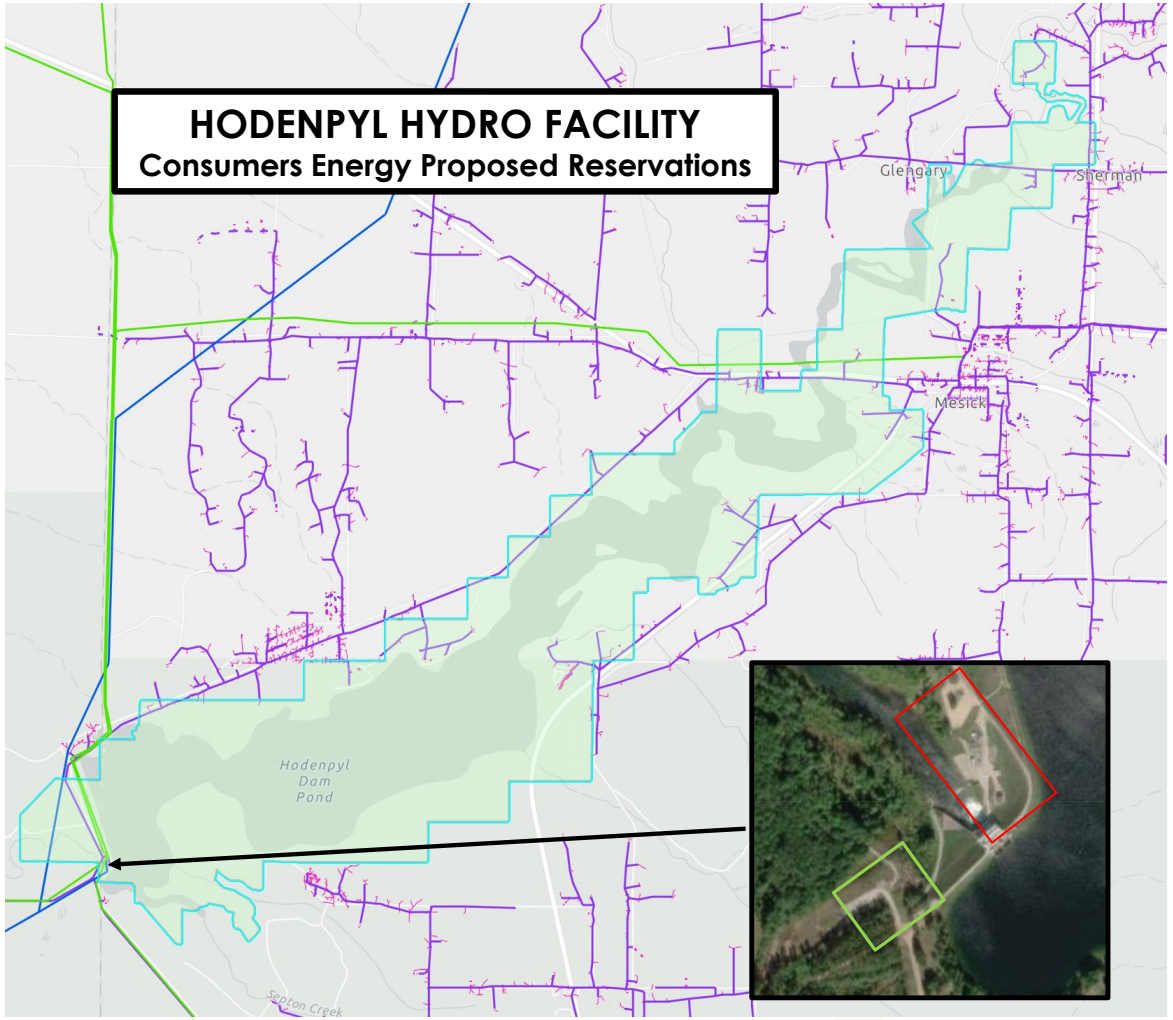
HODENPYL HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
2412-VS-0103	Wexford	CE fee
2312-21-4201	Wexford	Non CE fee
2312-19-2102	Wexford	Non CE fee
2312-19-2103	Wexford	Non CE fee
2312-19-2101	Wexford	Non CE fee
2312-30-2302	Wexford	Non CE fee
2312-30-2303	Wexford	Non CE fee
2312-30-4101	Wexford	Non CE fee
2312-30-1201	Wexford	Non CE fee
2412-36-4101	Wexford	Non CE fee
2412-36-3101	Wexford	Non CE fee
2412-36-3106	Wexford	Non CE fee
2412-36-3102	Wexford	Non CE fee
2412-36-3108	Wexford	Non CE fee
2412-36-3104	Wexford	Non CE fee
2412-36-3105	Wexford	Non CE fee
2412-36-3107	Wexford	Non CE fee
2412-VG-235	Wexford	Non CE fee
Unknown parcel River SWSE T24N,R12W Sec 36 (possible fee)	Wexford	Non CE fee
09-025-175-01 no flow	Wexford	Non CE fee
Unknown parcel water in SESENE T23N, R13W Sec 24	Wexford	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

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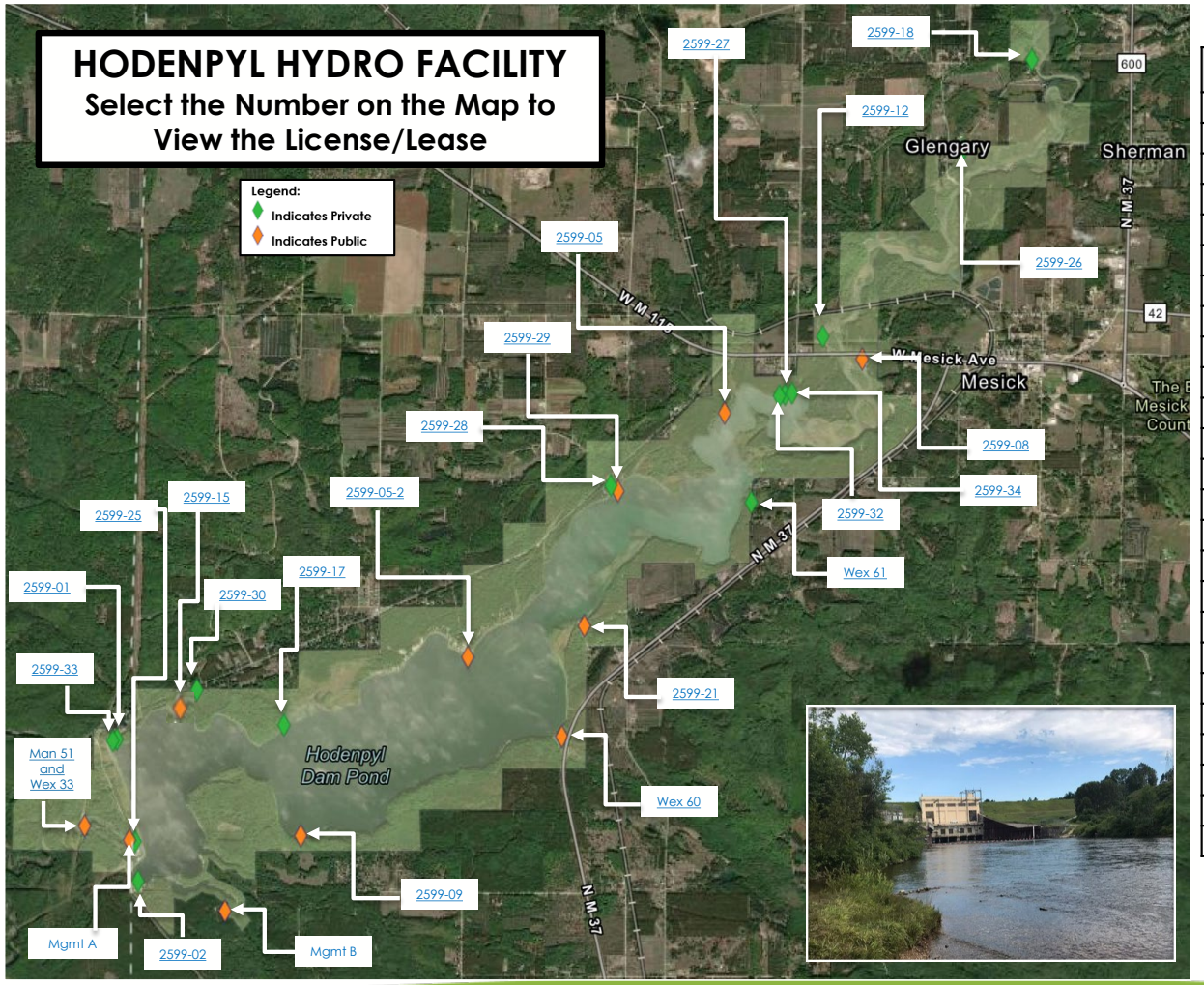


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Continued Next Sheet

REDACTED

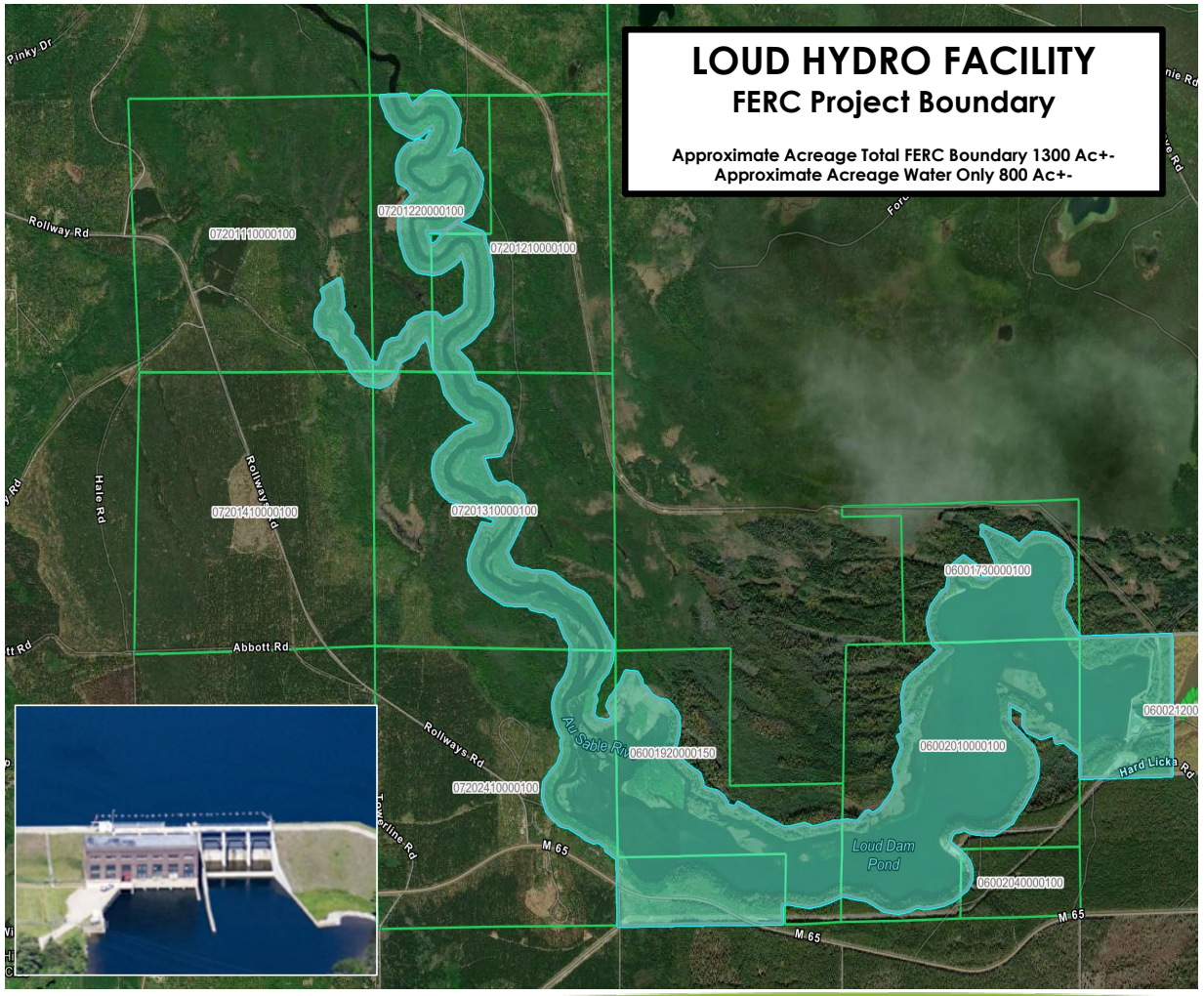


HODENPYL HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
2599-01	Group Dock	Private	Lease
2599-02	Group Dock	Private	Lease
2599-05	Campground	Public	Lease
2599-05	Campground	Public	Lease
2599-08	Day use park	Public	License
2599-09	Marina	Public	License
2599-12	Dock	Private	License
2599-15	Public Trail	Public	License
2599-17	Dock	Private	License
2599-18	Encroachment	Private	License
2599-21	Marina/Campground	Public	License
2599-25	Parking	Private	License
2599-26	Dock	Private	License
2599-27	Dock	Private	License
2599-28	Campground	Public	License
2599-29	Encroachment	Private	License
2599-30	Encroachment	Private	License
2599-32	Dock	Private	License
2599-33	Dock	Private	License
2599-34	Dock	Private	License
Man 51and Wex 33	Bridge and Trail	Public	Easement
Mgmt Plan A *	Public Canoe	Public	CE Land Mgmt Plan
Mgmt Plan B *	Campground	Public	CE Land Mgmt Plan
Wex 60	Roadside Park	Public	Easement
Wex 61	Access	Private	Easement

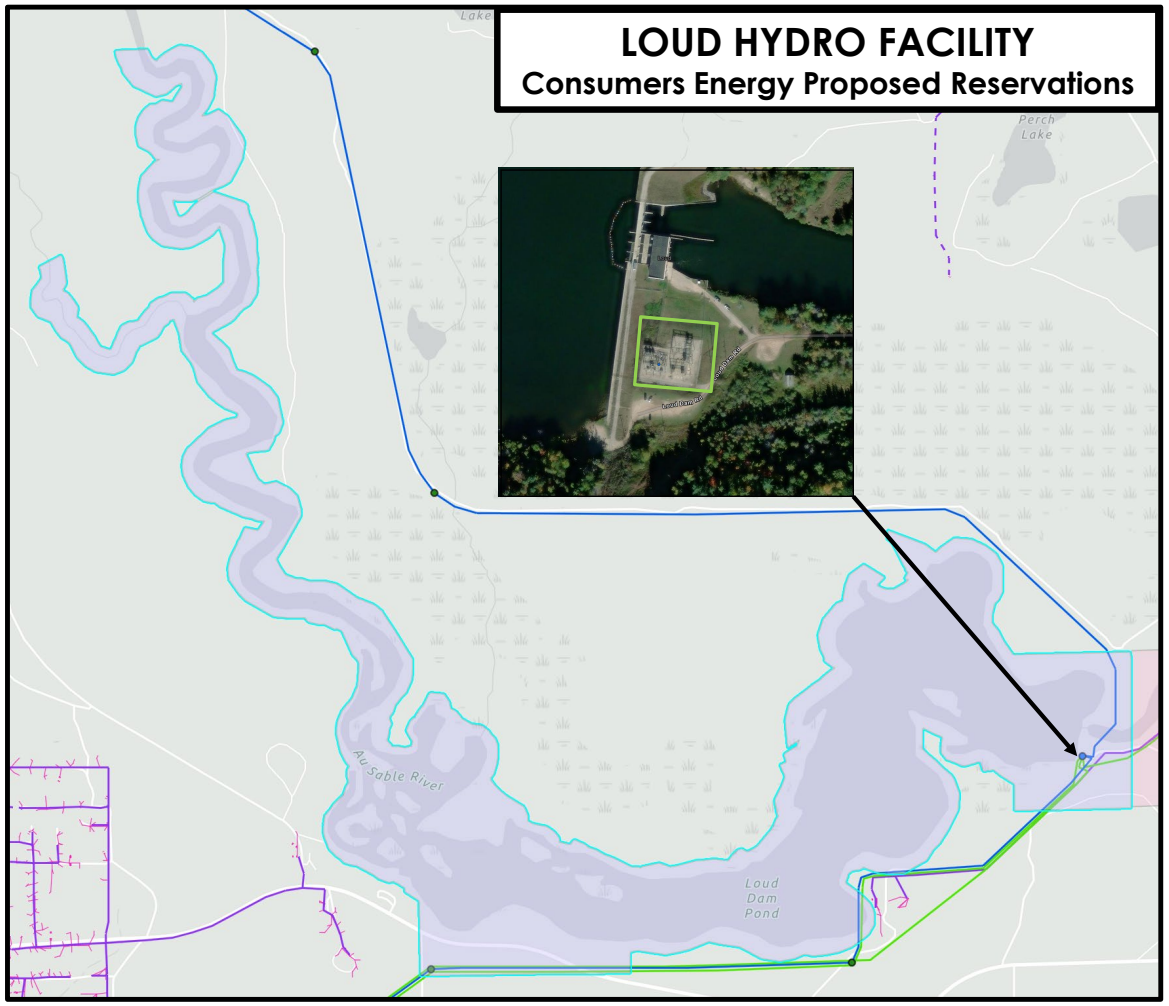
*Indicates no document linked

REDACTED



Tax Parcel #	County	CE Fee/Non Fee
060-019-200-001-00	Iosco	CE fee
060-021-200-001-00	Iosco	CE fee
07201110000100	Iosco	Non CE fee
07200120000100	Iosco	Non CE fee
07201410000100	Iosco	Non CE fee
07201310000100	Iosco	Non CE fee
07201220000100	Iosco	Non CE fee
07201210000100	Iosco	Non CE fee
06001730000100	Iosco	Non CE fee
07202410000100	Iosco	Non CE fee
06002040000100	Iosco	Non CE fee
06002010000100	Iosco	Non CE fee
06001920000150	Iosco	Non CE fee

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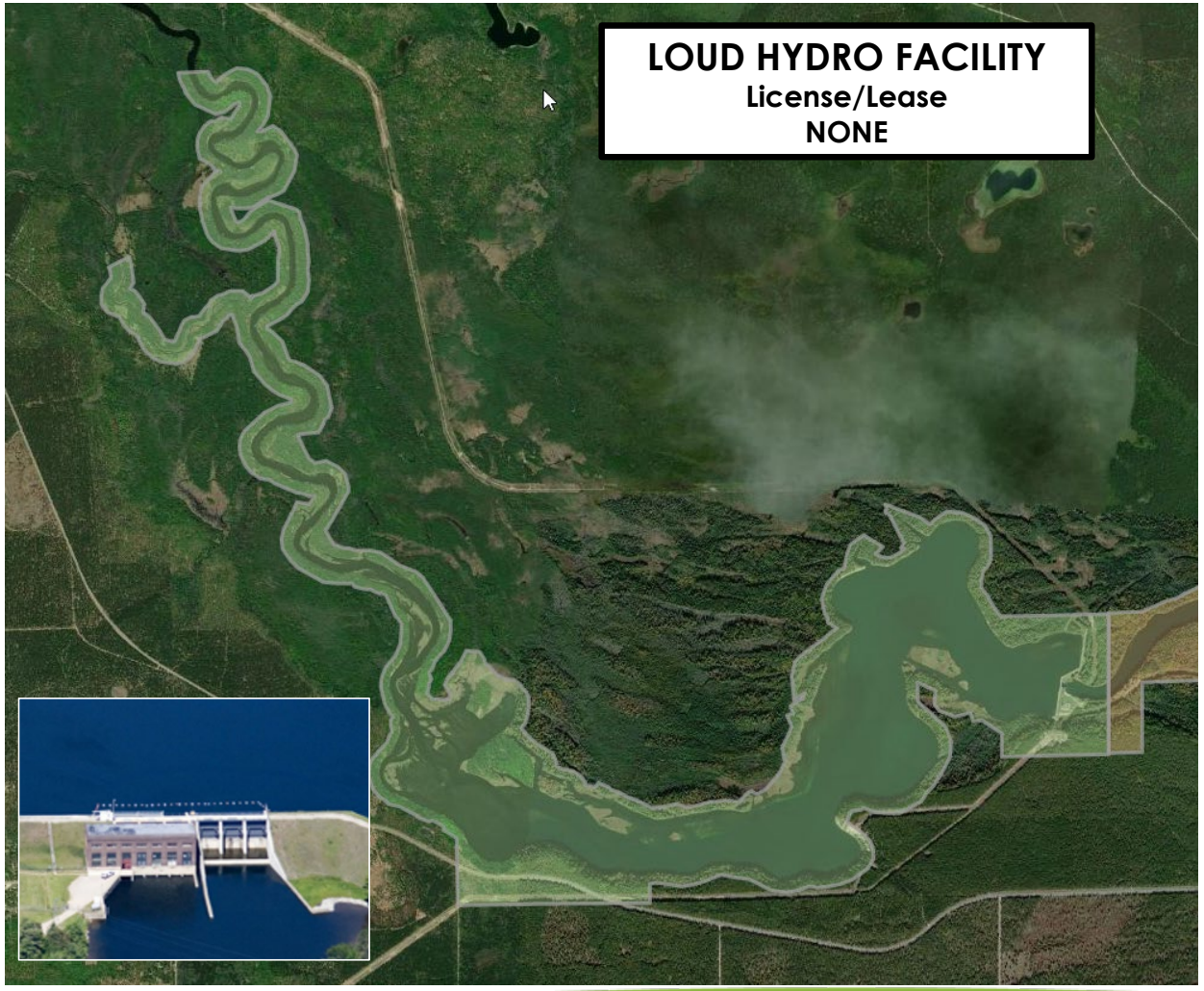


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- Indicates Secondary Underground Distribution
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Continued Next Sheet

REDACTED



LOUD HYDROELECTRIC GENERATING FACILITY

File Name	Purpose	Private or Public	Type
NONE	-	-	-

MIO HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
001-311-001-10	Oscoda	Non CE fee
006-307-001-02	Oscoda	Non CE fee
001-304-018-10	Oscoda	Non CE fee
001-305-012-10	Oscoda	Non CE fee
001-303-011-10	Oscoda	Non CE fee
001-302-097-25	Oscoda	Non CE fee
001-495-006-00	Oscoda	Non CE fee
001-309-001-25	Oscoda	Non CE fee
001-309-001-20	Oscoda	Non CE fee
001-309-001-10	Oscoda	Non CE fee
001-309-003-00	Oscoda	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

REDACTED

ROGERS HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
05 025 024 001	Mecosta	Non CE fee
05 025 027 000	Mecosta	Non CE fee
05 025 028 200	Mecosta	Non CE fee
05 025 030 000	Mecosta	Non CE fee
05 025 030 500	Mecosta	Non CE fee
05 025 030 600	Mecosta	Non CE fee
05 025 031 000	Mecosta	Non CE fee
05 025 200 003	Mecosta	Non CE fee
05 025 200 005	Mecosta	Non CE fee
05 025 200 006	Mecosta	Non CE fee
05 036 002 000	Mecosta	Non CE fee
05 036 002 900	Mecosta	Non CE fee
05 036 008 000	Mecosta	Non CE fee
05 036 009 300	Mecosta	Non CE fee
05 036 010 000	Mecosta	Non CE fee
05 039 043 000	Mecosta	Non CE fee
05 039 044 000	Mecosta	Non CE fee
05 039 045 000	Mecosta	Non CE fee
05 039 046 000	Mecosta	Non CE fee
05 039 048 000	Mecosta	Non CE fee
05 039 050 000	Mecosta	Non CE fee
05 040 000 000	Mecosta	Non CE fee
05 040 051 000	Mecosta	Non CE fee
05 040 053 000	Mecosta	Non CE fee
05 040 057 000	Mecosta	Non CE fee
05 040 058 000	Mecosta	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
05 040 059 000	Mecosta	Non CE fee
05 040 062 000	Mecosta	Non CE fee
05 040 064 000	Mecosta	Non CE fee
05 040 065 000	Mecosta	Non CE fee
05 040 067 000	Mecosta	Non CE fee
05 040 068 000	Mecosta	Non CE fee
05 040 072 000	Mecosta	Non CE fee
05 040 074 000	Mecosta	Non CE fee
05 040 075 000	Mecosta	Non CE fee
05 052 000 000	Mecosta	Non CE fee
05 052 023 000	Mecosta	Non CE fee
09 011 005 000	Mecosta	Non CE fee
09 014 013 000	Mecosta	Non CE fee
09 014 014 000	Mecosta	Non CE fee
09 014 015 000	Mecosta	Non CE fee
09-Muskegon River Section 01, 02, 06, 10, 11, 12, T14N, R10W	Mecosta	Non CE fee
10-Muskegon River Section 6, T14N, R9W	Mecosta	Non CE fee
05-Muskegon River in Sec 24, 25, 36, T15N, R10W	Mecosta	Non CE fee
05-Muskegon River in Sec 31, T15N, R9W	Mecosta	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

TIPPY HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
10-017-100-01	Manistee	Non CE fee
10-017-100-02	Manistee	Non CE fee
10-021-100-01	Manistee	Non CE fee
05-125-100-01	Manistee	Non CE fee
05-034-125-01	Manistee	Non CE fee
05-011-100-01	Manistee	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

REDACTED

WEBBER HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT)

Tax Parcel #	County	CE Fee/Non Fee
34-080-033-000-030-00	Ionia	Non CE fee
34-080-033-000-035-00	Ionia	Non CE fee
34-080-033-000-040-21	Ionia	Non CE fee
34-080-033-000-040-22	Ionia	Non CE fee
34-080-033-000-040-23	Ionia	Non CE fee
34-080-033-000-040-24	Ionia	Non CE fee
34-080-033-000-040-25	Ionia	Non CE fee
34-080-033-000-040-26	Ionia	Non CE fee
34-080-033-000-050-01	Ionia	Non CE fee
34-080-033-000-055-00	Ionia	Non CE fee
34-080-033-000-055-01	Ionia	Non CE fee
34-080-050-000-025-00	Ionia	Non CE fee
34-080-050-000-030-01	Ionia	Non CE fee
34-080-050-000-035-00	Ionia	Non CE fee
34-080-050-000-055-10	Ionia	Non CE fee
34-080-050-000-065-00	Ionia	Non CE fee
34-080-050-000-070-00	Ionia	Non CE fee
34-080-050-000-080-00	Ionia	Non CE fee
34-080-050-000-085-00	Ionia	Non CE fee
34-080-050-000-095-00	Ionia	Non CE fee
34-080-050-000-100-00	Ionia	Non CE fee
34-080-050-000-140-00	Ionia	Non CE fee
34-080-050-000-150-00	Ionia	Non CE fee
34-080-050-000-175-00	Ionia	Non CE fee
34-080-050-000-175-01	Ionia	Non CE fee
34-080-050-000-200-00	Ionia	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
34-080-050-000-220-01	Ionia	Non CE fee
34-080-050-000-245-10	Ionia	Non CE fee
34-080-050-000-250-10	Ionia	Non CE fee
34-080-050-000-255-10	Ionia	Non CE fee
34-080-050-000-280-00	Ionia	Non CE fee
34-080-050-000-290-01	Ionia	Non CE fee
34-080-050-000-295-00	Ionia	Non CE fee
34-080-050-000-310-00	Ionia	Non CE fee
34-080-050-000-315-00	Ionia	Non CE fee
34-080-050-000-320-00	Ionia	Non CE fee
34-140-003-000-065-01	Ionia	Non CE fee
34-140-004-000-005-00	Ionia	Non CE fee
34-140-004-000-015-00	Ionia	Non CE fee
34-140-004-000-020-10	Ionia	Non CE fee
34-140-004-000-020-20	Ionia	Non CE fee
34-140-004-000-020-30	Ionia	Non CE fee
34-140-005-000-005-00	Ionia	Non CE fee
34-140-005-000-005-01	Ionia	Non CE fee
34-140-005-000-010-00	Ionia	Non CE fee
34-140-005-000-050-00	Ionia	Non CE fee
34-140-008-000-005-00	Ionia	Non CE fee
34-140-008-000-035-00	Ionia	Non CE fee
34-140-008-000-040-02	Ionia	Non CE fee
34-140-008-000-040-03	Ionia	Non CE fee
34-140-008-000-040-04	Ionia	Non CE fee
34-140-008-000-040-05	Ionia	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
34-140-008-000-040-06	Ionia	Non CE fee
34-140-008-000-040-08	Ionia	Non CE fee
34-140-008-000-045-01	Ionia	Non CE fee
34-140-008-000-045-10	Ionia	Non CE fee
34-140-008-000-045-20	Ionia	Non CE fee
34-140-008-000-055-10	Ionia	Non CE fee
34-140-008-000-060-00	Ionia	Non CE fee
34-140-008-000-060-01	Ionia	Non CE fee
34-140-008-000-070-01	Ionia	Non CE fee
34-140-009-000-005-00	Ionia	Non CE fee
34-140-009-000-005-01	Ionia	Non CE fee
34-140-009-000-005-02	Ionia	Non CE fee
34-140-009-000-010-01	Ionia	Non CE fee
34-140-009-000-010-02	Ionia	Non CE fee
34-140-009-000-010-03	Ionia	Non CE fee
34-140-009-000-010-06	Ionia	Non CE fee
34-140-009-000-010-08	Ionia	Non CE fee
34-140-009-000-010-09	Ionia	Non CE fee
34-140-009-000-010-10	Ionia	Non CE fee
34-140-009-000-010-11	Ionia	Non CE fee
34-140-009-000-010-12	Ionia	Non CE fee
34-140-009-000-010-13	Ionia	Non CE fee
34-140-009-000-010-72	Ionia	Non CE fee
34-140-009-000-010-30	Ionia	Non CE fee
34-140-009-000-010-40	Ionia	Non CE fee
34-140-009-000-010-50	Ionia	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

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WEBBER HYDROELECTRIC GENERATING FACILITY TAX PARCELS (CONT.)

Tax Parcel #	County	CE Fee/Non Fee
34-140-009-000-015-08	Ionia	Non CE fee
34-140-009-000-015-09	Ionia	Non CE fee
34-140-009-000-015-21	Ionia	Non CE fee
34-140-009-000-015-30	Ionia	Non CE fee
34-140-009-000-025-00	Ionia	Non CE fee
34-140-009-000-035-00	Ionia	Non CE fee
34-140-009-000-035-01	Ionia	Non CE fee
34-140-009-000-045-00	Ionia	Non CE fee
34-140-009-000-050-10	Ionia	Non CE fee
34-140-010-000-040-11	Ionia	Non CE fee
34-140-010-000-040-12	Ionia	Non CE fee
34-140-010-000-040-22	Ionia	Non CE fee
34-140-010-000-040-40	Ionia	Non CE fee
34-140-010-000-040-50	Ionia	Non CE fee
34-140-010-000-065-10	Ionia	Non CE fee
34-140-017-000-025-01	Ionia	Non CE fee
34-140-017-000-030-00	Ionia	Non CE fee
34-140-017-000-030-01	Ionia	Non CE fee
34-140-017-000-035-20	Ionia	Non CE fee
34-140-017-000-035-30	Ionia	Non CE fee
34-140-017-000-035-40	Ionia	Non CE fee
34-140-017-000-045-01	Ionia	Non CE fee
34-140-017-000-045-03	Ionia	Non CE fee
34-140-017-000-045-04	Ionia	Non CE fee
34-140-017-000-045-06	Ionia	Non CE fee
34-140-017-000-045-07	Ionia	Non CE fee
34-140-017-000-045-08	Ionia	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
34-140-020-000-035-01	Ionia	Non CE fee
34-140-020-000-035-20	Ionia	Non CE fee
34-140-020-000-040-00	Ionia	Non CE fee
34-140-020-000-040-01	Ionia	Non CE fee
34-140-020-000-045-00	Ionia	Non CE fee
34-140-020-000-065-10	Ionia	Non CE fee
34-140-020-000-065-20	Ionia	Non CE fee
34-140-020-000-065-40	Ionia	Non CE fee
34-140-020-000-065-50	Ionia	Non CE fee
34-140-020-000-125-02	Ionia	Non CE fee
34-140-020-000-125-31	Ionia	Non CE fee
34-140-150-000-025-00	Ionia	Non CE fee
34-140-150-000-030-00	Ionia	Non CE fee
34-140-150-000-035-00	Ionia	Non CE fee
34-140-150-000-040-00	Ionia	Non CE fee
34-140-150-000-045-00	Ionia	Non CE fee
34-140-150-000-050-00	Ionia	Non CE fee
34-140-150-000-055-00	Ionia	Non CE fee
34-140-150-000-060-00	Ionia	Non CE fee
34-140-150-000-065-00	Ionia	Non CE fee
34-140-150-000-075-00	Ionia	Non CE fee
34-140-200-000-045-00	Ionia	Non CE fee
34-140-200-000-046-00	Ionia	Non CE fee
34-140-999-000-015-00	Ionia	Non CE fee
34-080-050-000-TBD-TBD	Ionia	Non CE fee
34-140-200-000-046-00	Ionia	Non CE fee
34-140-999-000-015-00	Ionia	Non CE fee

Tax Parcel #	County	CE Fee/Non Fee
34-080-050-000-TBD-TBD	Ionia	Non CE fee
34-140-003-000-060-02	Ionia	Non CE fee
34-140-003-000-060-01	Ionia	Non CE fee
34-140-TBD Island in the SESE of Sec 4, T6N, R5W and Sec NESE Sec 4	Ionia	Non CE fee
34-140-200-000-004-00	Ionia	Non CE fee
34-140-200-000-005-00	Ionia	Non CE fee
34-140-200-000-006-00	Ionia	Non CE fee
34-140-200-000-007-00	Ionia	Non CE fee
34-140-200-000-008-00	Ionia	Non CE fee
34-140-200-000-009-00	Ionia	Non CE fee
34-140-200-000-010-00	Ionia	Non CE fee
34-140-200-000-011-00	Ionia	Non CE fee
34-140-200-000-012-00	Ionia	Non CE fee
34-140-200-000-013-00	Ionia	Non CE fee
34-140-200-000-014-00	Ionia	Non CE fee
34-140-200-000-015-00	Ionia	Non CE fee
34-140-200-000-016-00	Ionia	Non CE fee
34-140-200-000-017-00	Ionia	Non CE fee
34-140-200-000-018-00	Ionia	Non CE fee
34-140-200-000-039-00	Ionia	Non CE fee
34-140-200-000-040-00	Ionia	Non CE fee
34-140-200-000-041-00	Ionia	Non CE fee
34-140-200-000-042-00	Ionia	Non CE fee
34-140-200-000-043-00	Ionia	Non CE fee
34-140-200-000-044-00	Ionia	Non CE fee

* Tax Parcel # and CE Fee/Non-CE Fee Unverified by Deed - List from GIS and Property Tax Receipts Sent to Title Company for Review

Continued Next Sheet

EXHIBIT W-1

Form of Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING
WITH RESPECT TO THE
ASSUMPTION OF RESPONSIBILITIES UNDER THE COLLECTIVE BARGAINING AGREEMENT

Consumers Energy Company ("Consumers") and the Utility Workers Union of America (affiliated with the AFL-CIO) and its Michigan State Utility Workers Council ("Union") are parties to that certain Working Agreement effective as of October 1, 2020, by and between Consumers and Union, that certain Memorandum of Agreement effective as of April 1, 2025, by and between Consumers, and those addenda, settlement agreements, side agreements, and memoranda between Consumers and Union set forth in Attachment A hereto (together, the "Collective Bargaining Agreement"). Consumers and Confluence Hydro, LLC ("Confluence Hydro") have entered into a Purchase and Sale Agreement, dated as of September 3, 2025 (the "PSA"), pursuant to which Consumers will sell and Confluence Hydro will purchase thirteen (13) hydroelectric projects which are set forth in Attachment B attached hereto (each individually, a "Project", and collectively, the "Projects"), on the terms and subject to conditions provided therein. As a condition to the sale of the Projects, Confluence Hydro has agreed to be bound by the provisions of the Collective Bargaining Agreement that are applicable to the Projects and the employees working at the Projects, and to provide equivalent benefits set forth therein, and will assume such responsibilities from Consumers. Effective upon the consummation of the sale of the Projects pursuant to the PSA (the "Effective Date"), Consumers shall transfer all such applicable rights and obligations under the Collective Bargaining Agreement to Confluence Hydro.

To effect the transfer of the Collective Bargaining Agreement and the applicable Consumers' obligations thereunder, Consumers shall (i) contact the Union and inform them of the consummation of the sale of the Projects as soon as practicable, and (ii) inform the Union that Consumers and Confluence Hydro have agreed that Confluence Hydro shall be bound by the provisions of the Collective Bargaining Agreement applicable to the Projects and the employees working at the Projects, and assign those future obligations with respect to each Project to Confluence Hydro. After the Effective Date, Confluence Hydro shall inform the Union in writing of its willingness to become bound by the terms and conditions as set forth within the Collective Bargaining Agreement as applicable to each Project and employee working at such Project in its current form, subject to necessary changes to conform to Confluence Hydro benefit plans and business processes. *See* Attachment C, Notice of Transfer to the Union.

Beginning on the Effective Date and continuing through the term of the Collective Bargaining Agreement, the parties to the Collective Bargaining Agreement as to each Project shall be Confluence Hydro, LLC, and the Utility Workers Union of America (affiliated with the AFL-CIO) and its Michigan State Utility Workers Council. This Agreement does not otherwise affect or transfer Consumers' obligations to the Union under the Collective Bargaining Agreement beyond those Projects.

Signature Pages to Follow

IN WITNESS WHEREOF, Consumers and Confluence Hydro have executed this Agreement as of the Effective Date.

CONSUMERS ENERGY COMPANY

By:_____
Name:
Title:

CONFLUENCE HYDRO, LLC

By:_____
Name:
Title:

ATTACHMENT A

ADDENDA, SETTLEMENT AGREEMENTS, SIDE LETTERS AND MEMORANDA TO COLLECTIVE BARGAINING AGREEMENT

1. Generation Transfer Settlement Agreement between Seller and Union dated as of March 7, 2022.
2. AuSable River (5 Channels) On Call Agreement dated as of March 9, 2022.
3. Hydro Settlement Agreement between Seller and Union dated as of June 10, 2022.
4. Hydroelectric Generating Plants Webber/Calkins Bridge Coverage Agreement between Seller and Union dated as of September 19, 2018.
5. 2016 Addendum to Attachment 24 of the 2010 Memorandum of Agreement dated as of October 18, 2016.
6. Temporary Union Instructor Agreement between Seller and Union dated as of February 7, 2012.
7. Memorandum of Experimental 4-10 Schedule delivered by Seller to Union dated as of May 12, 1998.
8. Hydro Control Monitoring System Agreement between Seller and Union dated as of February 1, 2016.
9. Vacation Donation Agreement (OM&C/CCC) between Seller and Union dated as of June 1, 2020.

ATTACHMENT B

PROJECTS

1. The hydroelectric project known as the Alcona Hydroelectric Project, located on the Au Sable River near Glennie, Michigan.

2. The hydroelectric project known as the Calkins Bridge Hydroelectric Project, located on the Kalamazoo River in Allegan County, Michigan.

3. The hydroelectric project known as the Cooke Dam Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

4. The hydroelectric project known as the Croton Hydroelectric Project, located on the Muskegon River near Croton Township, Michigan.

5. The hydroelectric project known as the Five Channels Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

6. The hydroelectric project known as the Foote Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

7. The hydroelectric project known as the Hardy Hydroelectric Project, located on the Muskegon River near Oxbow, Michigan.

8. The hydroelectric project known as the Hodenpyl Hydroelectric Project, located on the Manistee River near Cadillac, Michigan.

9. The hydroelectric project known as the Loud Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

10. The hydroelectric project known as the Mio Hydroelectric Project, located on the Au Sable River in Oscoda County, Michigan.

11. The hydroelectric project known as the Rogers Hydroelectric Project, located on the Muskegon River near Big Rapids, Michigan.

12. The hydroelectric project known as the Tippy Hydroelectric Project, located on the Manistee River near Manistee, Michigan.

13. The hydroelectric project known as the Webber Hydroelectric Project, located on the Grand River near Ionia, Michigan.

ATTACHMENT C

Notice of Transfer to Union

[Attached]

EXHIBIT W-2

Form of Union Notice

[_____, ____]

[By First Class Mail and Email]

[*Insert Union Representative Information*]

RE: Consumers Energy Company Assumption of Certain Responsibilities under the Collective Bargaining Agreement to Confluence Hydro, LLC

Consistent with prior notice to representatives of Utility Workers Union of America (affiliated with the AFL-CIO) and its Michigan State Utility Workers Council ("Union") by Consumers Energy Company ("Consumers"), this letter is to inform you that Confluence Hydro, LLC ("Confluence Hydro") has purchased the assets associated with the thirteen (13) hydroelectric projects specified in Attachment B attached hereto (each individually a "Project", and collectively, the "Projects") owned by Consumers, effective as of [_____, ____]. By this letter, Confluence Hydro respectfully notifies the Union, that Confluence Hydro will step into the position of Consumers with respect to the Union employees working at such Projects, and shall be responsible for Consumers' future obligations thereunder applicable to such employees working at the Projects for the remainder of the terms of that certain Working Agreement effective as of October 1, 2020, by and between Consumers and Union, that certain Memorandum of Agreement effective as of April 1, 2025, by and between Consumers and Union, and those addenda, settlement agreements, side agreements and memoranda applicable to the Projects set forth in the Memorandum of Understanding (as defined below)(together, the "Collective Bargaining Agreement"), as amended, and Consumers' bargaining obligations thereunder, beginning on [_____, ____], subject to necessary changes to conform to Confluence Hydro's benefit plans and business process. *See* the Memorandum of Understanding with Respect to the Transfer of the Responsibilities Under the Collective Bargaining Agreement between Consumers and Confluence Hydro attached hereto as Attachment A ("Memorandum of Understanding").

Confluence Hydro looks forward to a good working relationship with the Union. We would appreciate the opportunity to introduce ourselves at your convenience. If you have any questions, please do not hesitate to contact me at [insert contact information].

Sincerely,

[insert bargaining representative]

Confluence Hydro, LLC

ATTACHMENT A

MEMORANDUM OF UNDERSTANDING
WITH RESPECT TO THE TRANSFER OF THE RESPONSIBILITIES UNDER THE COLLECTIVE BARGAINING AGREEMENT

[Attached]

ATTACHMENT B

PROJECTS

1. The hydroelectric project known as the Alcona Hydroelectric Project, located on the Au Sable River near Glennie, Michigan.

2. The hydroelectric project known as the Calkins Bridge Hydroelectric Project, located on the Kalamazoo River in Allegan County, Michigan.

3. The hydroelectric project known as the Cooke Dam Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

4. The hydroelectric project known as the Croton Hydroelectric Project, located on the Muskegon River near Croton Township, Michigan.

5. The hydroelectric project known as the Five Channels Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

6. The hydroelectric project known as the Foote Hydroelectric Project, located on the Au Sable River in Iosco County, Michigan.

7. The hydroelectric project known as the Hardy Hydroelectric Project, located on the Muskegon River near Oxbow, Michigan.

8. The hydroelectric project known as the Hodenpyl Hydroelectric Project, located on the Manistee River near Cadillac, Michigan.

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11. The hydroelectric project known as the Rogers Hydroelectric Project, located on the Muskegon River near Big Rapids, Michigan.

12. The hydroelectric project known as the Tippy Hydroelectric Project, located on the Manistee River near Manistee, Michigan.

13. The hydroelectric project known as the Webber Hydroelectric Project, located on the Grand River near Ionia, Michigan.

EXHIBIT X

Equity Commitment Letter

REDACTED



4747 Bethesda Ave, Suite 1220
Bethesda, MD 20814
www.hullstreetenergy.com

[redacted]

REDACTED

[redacted]

REDACTED

[Redacted]

REDACTED

[Redacted]

[Signature Page to Equity Commitment Letter]

REDACTED

Execution Version

RENEWABLE ENERGY PURCHASE AGREEMENT

BETWEEN

CONSUMERS ENERGY COMPANY

AND

CONFLUENCE HYDRO, LLC

[redacted]

REDACTED

[redacted]

REDACTED

[redacted]

Date: September 3, 2025

REDACTED

[redacted]

RENEWABLE ENERGY PURCHASE AGREEMENT

PART II
TABLE OF CONTENTS

Page

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List of Exhibits

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RENEWABLE ENERGY PURCHASE AGREEMENT

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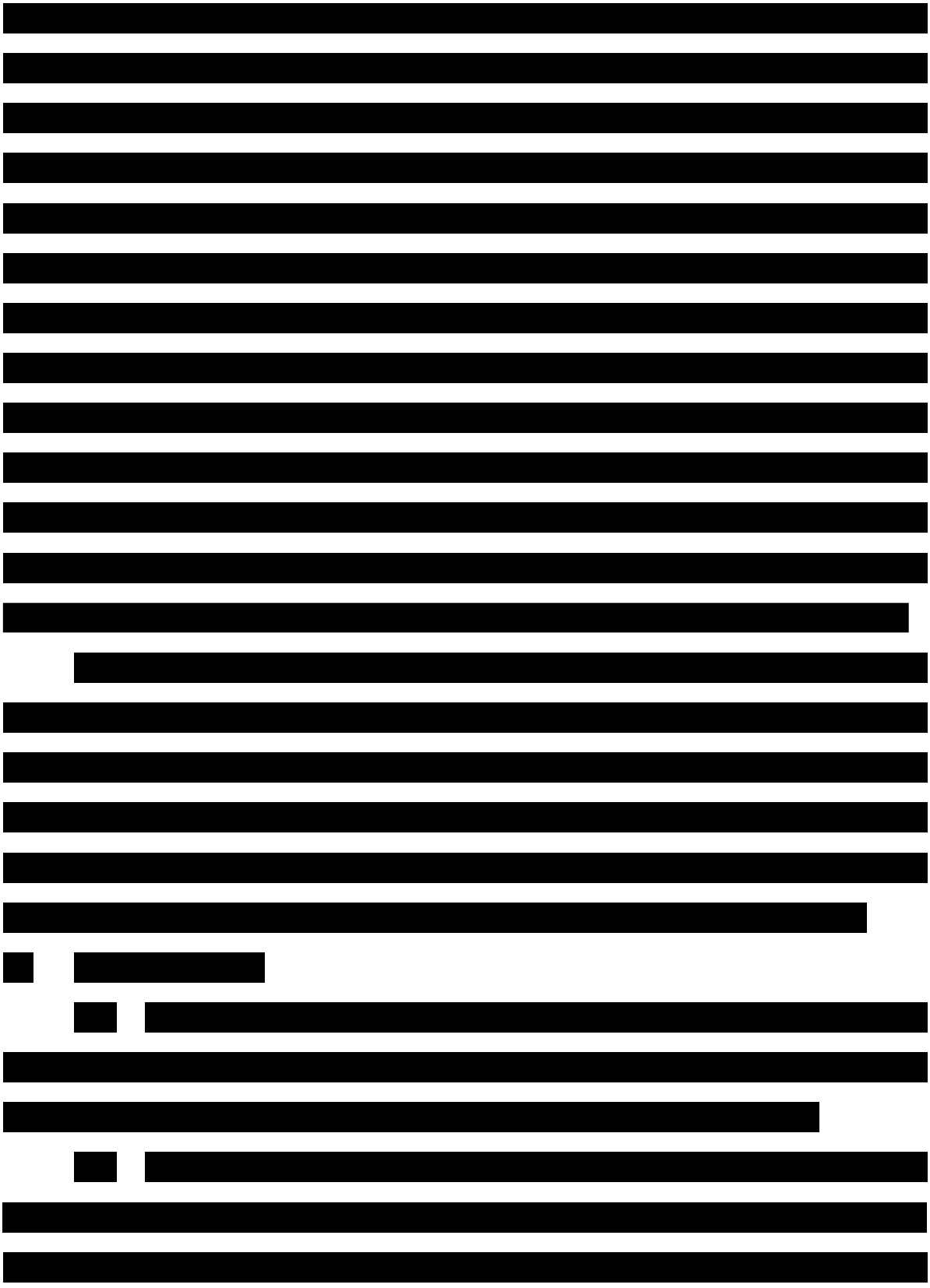
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Exhibit A

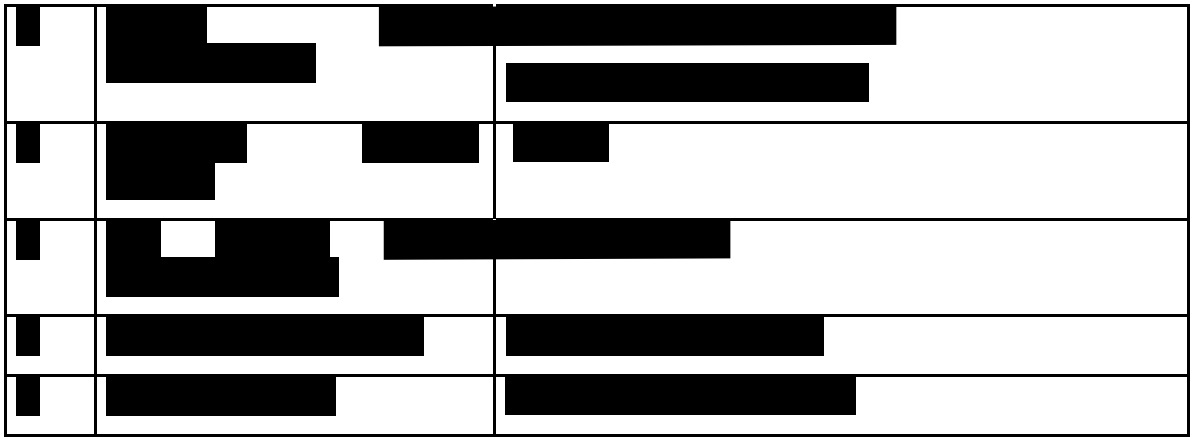
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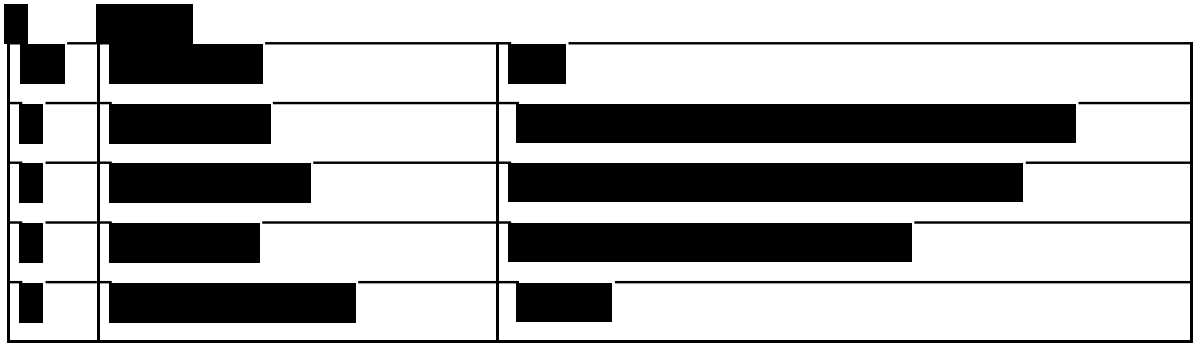
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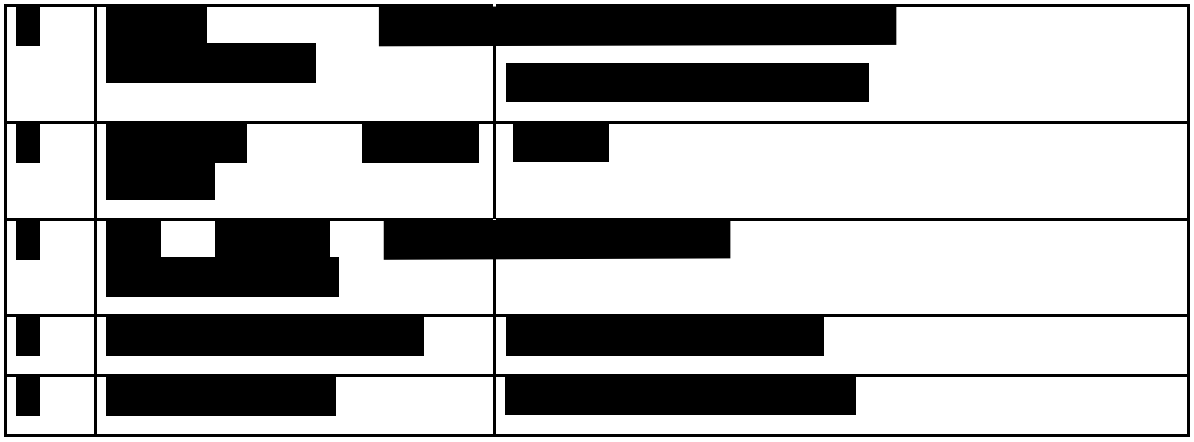
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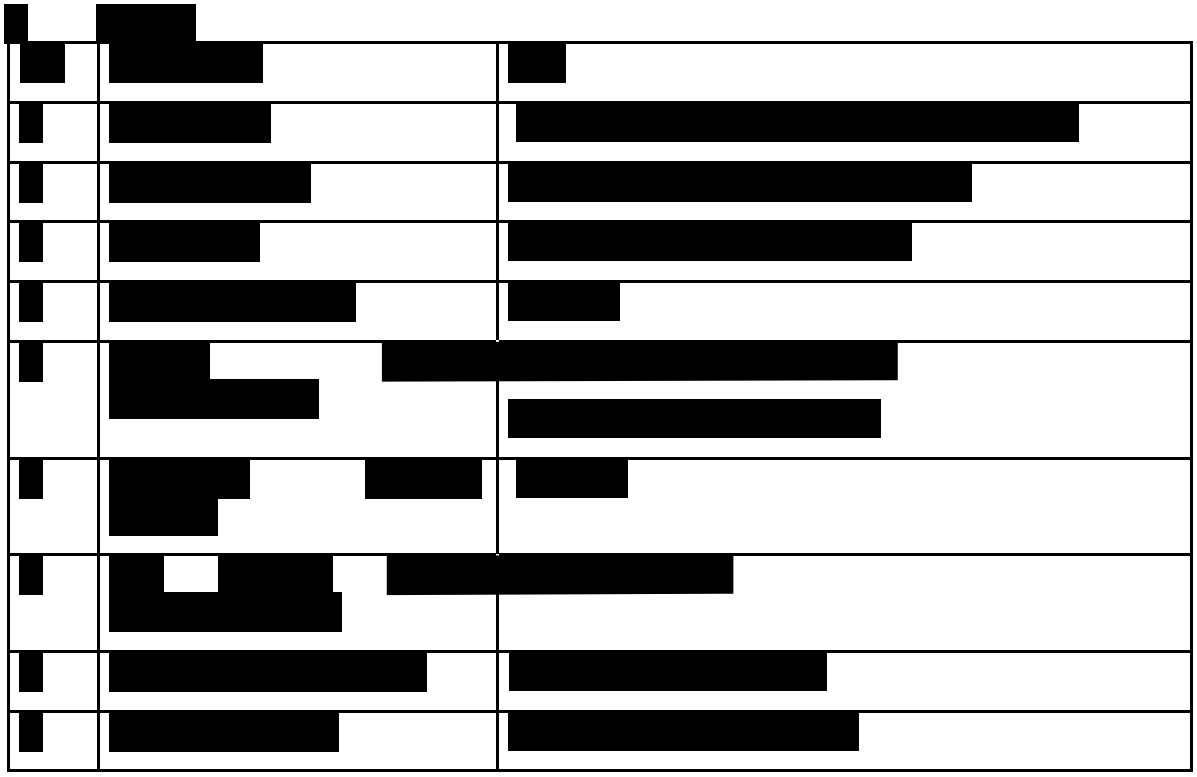


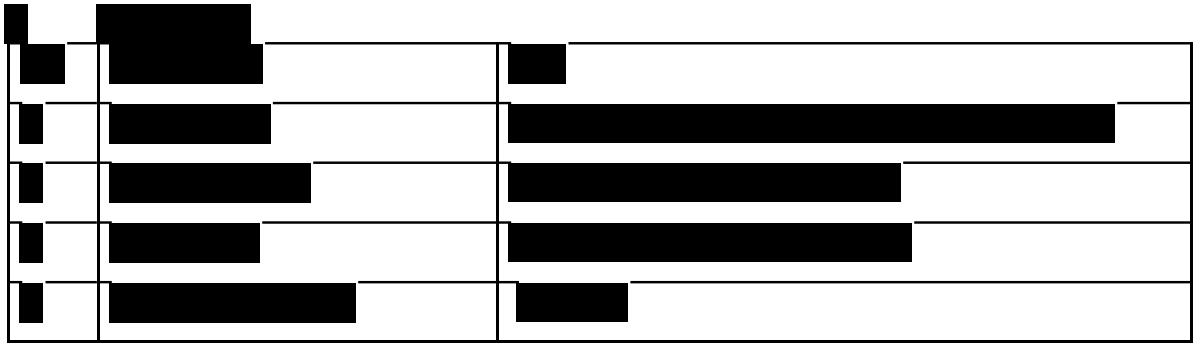


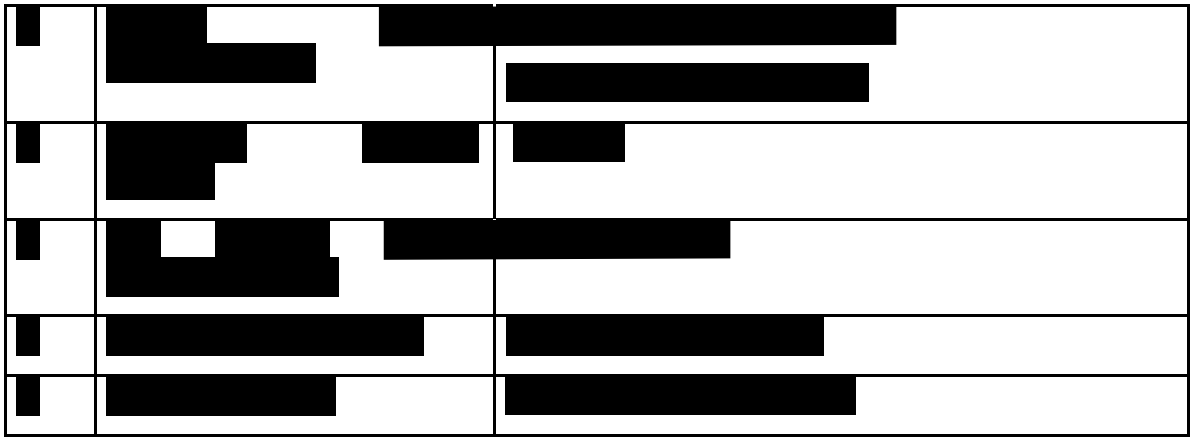


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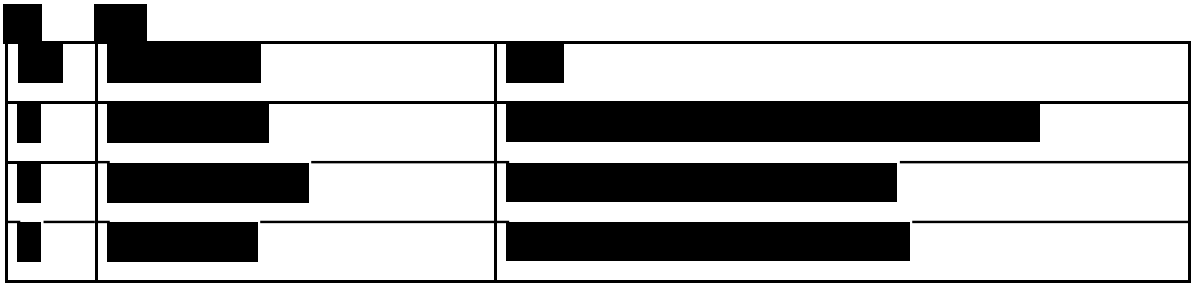








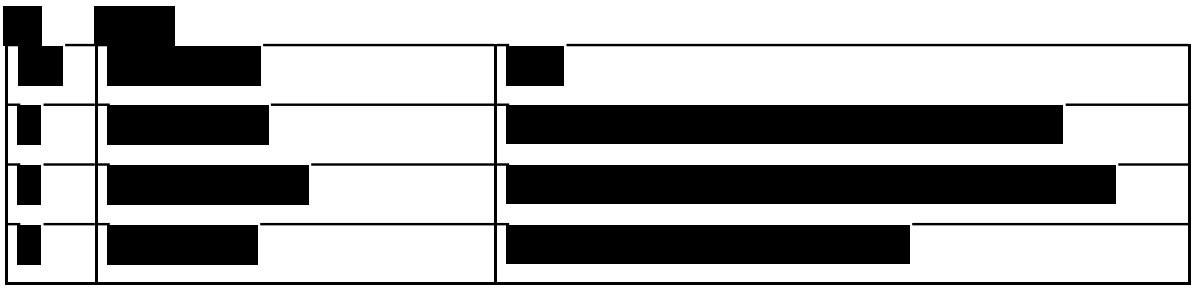




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Exhibit B

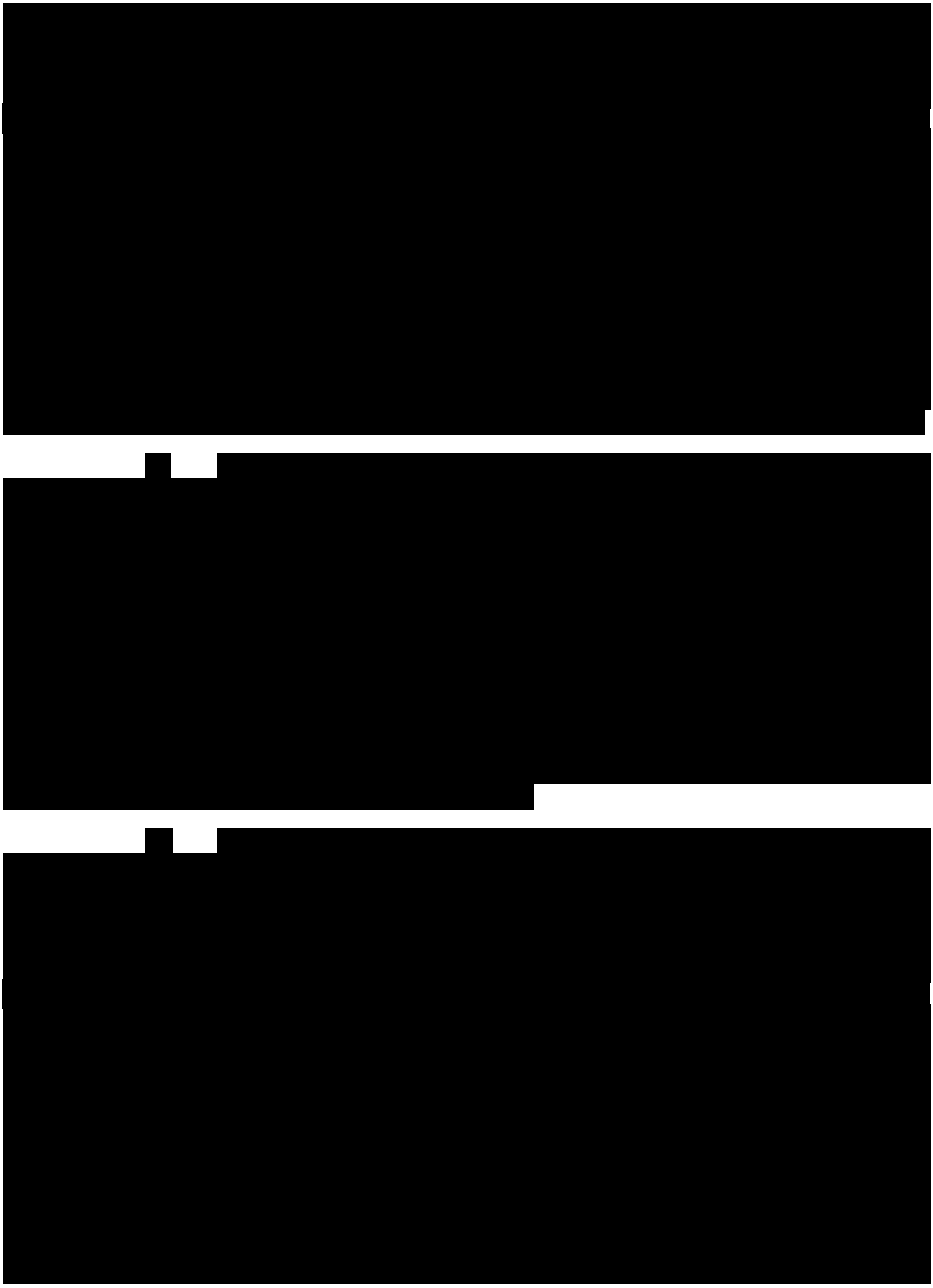
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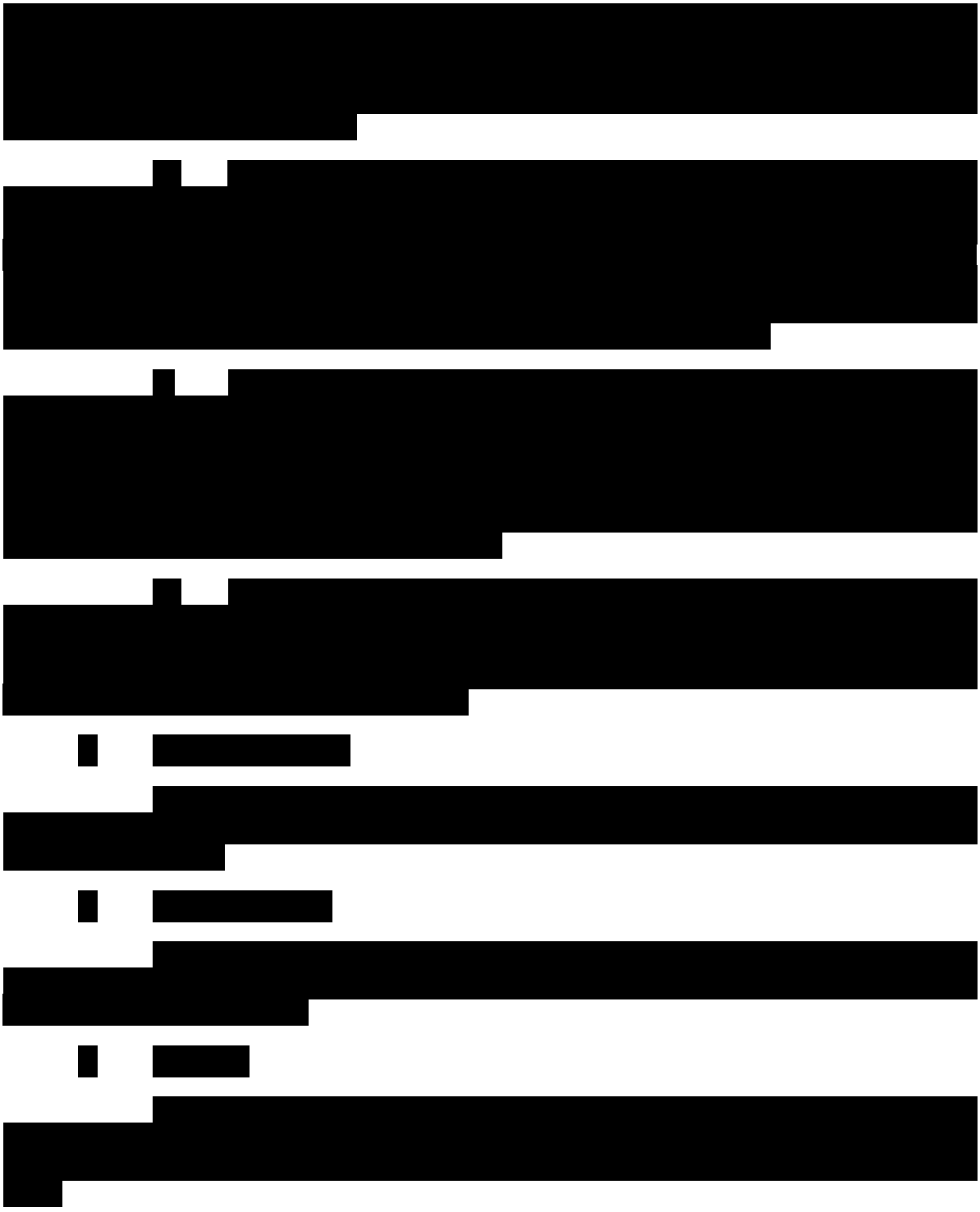
Exhibit C



REDACTED



REDACTED



REDACTED

[redacted]

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REDACTED



REDACTED

Exhibit D

[redacted]

REDACTED

[redacted]

REDACTED

[redacted]

Exhibit E

Energy Purchase Price Schedule

The Energy Purchase Price for Delivered Energy shall be the rate as determined in Tables 1 through 5, as set forth below.

The Parties acknowledge and agree that the spillway construction project at the Rogers Plant ("Alternative Rogers Spillway Project") shall solely consist of the following sub-projects: (a) alteration and repair of spillway slab; (b) replacement of right downstream retaining wall; (c) remediation of spillway gates four (4), five (5), and six (6); (d) filling of spillway chambers; (e) remediation of sand and stone boils in middle embankment reverse filter; (f) concrete remediation of log chute between spillway and powerhouse; (g) repair of concrete on right and left spillway walls; and/or (h) any other sub-project, including the purchase of any parcels of real property, required by FERC to pass the FERC-approved inflow design flood at the Rogers Plant.

The Parties further acknowledge and agree that Buyer may have certain liability incurred under the PSA for Material Casualty, Material Condemnation, PSA Indemnities, and Purchaser Title Objections. Should Buyer have any such liability, Buyer will provide written notice to Seller memorializing the applicable amount of such liability that the Parties have agreed to pursuant to the PSA and thereafter such amount shall be paid from Buyer to Seller starting in the Billing Month immediately subsequent to Buyer's notice and the Energy Purchase Price for Delivered Energy shall be the rate adjusted as set forth in Table 2 below.

The Parties further acknowledge and agree that through the acquisition of the Plants, Seller, and/or the Subsidiaries, may be eligible for a financial loan from the United States Army Corp of Engineers through the Corps Water Infrastructure Financing Program (the "ACoE Loan"). Should Seller, and/or the Subsidiaries, receive the ACoE Loan, Seller shall provide notice to Buyer within five (5) Days of such receipt. Subsequent to Seller's receipt of the ACoE Loan, the Energy Purchase Price for Delivered Energy shall be adjusted as set forth in Table 5 below.

Table 1	
Commencing on the Effective Date	Energy Purchase Price shall be $160.00/MWh for the first 12 Months after the Effective Date and increasing by 2.5% for each subsequent 12-Month period thereafter.

Table 2	
Commencing on the first Day of the Billing Month subsequent to Buyer's notice to Seller of, and the Parties mutual agreement pursuant to the PSA on, the amount to be recovered by Seller under this Agreement	Energy Purchase Price shall increase by $0.133/MWh times the total amount mutually agreed to by the Parties pursuant to the PSA which will be recovered by Seller under this Agreement (in millions of dollars). The amount of $0.133/MWh will apply for the first 12 Months after the Effective Date and increase by 2.5% for each subsequent 12-Month period thereafter.

Table 3	
Commencing if and when Seller incurs capital investment cost overruns during the Term of this Agreement at the Hardy Plant in excess of $216,500,000 solely under the scope(s) of work set forth in the Hardy EPC Agreement as in effect as of the Effective Date and for which Seller has provided Buyer reasonable supporting documentation and evidence of such capital investment cost overruns.	Energy Purchase Price shall increase by the product of (i) the total amount of capital investment cost overruns incurred by Seller during the Term of this Agreement at the Hardy Plant solely under the scope(s) of work set forth in the Hardy EPC Agreement as in effect as of the Effective Date (in millions of dollars), (ii) $0.133/MWh and (iii) 0.75, provided that, in no event shall the Energy Purchase Price increase as a result of adjustments pursuant to this Table 3 above $165.00 / MWh. The amount of $165/MWh will apply for the first 12 Months after the Effective Date and increase by 2.5% for each subsequent 12-Month period thereafter.

Table 4	
Commencing if and when Seller incurs capital investment cost overruns during the Term of this Agreement at the Rogers Plant in excess of $16,841,000 related solely to the Alternative Rogers Spillway Project and for which Seller has provided Buyer reasonable supporting documentation and	Energy Purchase Price shall increase by the product of (i) the total amount of capital investment cost overruns incurred by Seller during the Term of this Agreement at the Rogers Plant related solely to the Alternative Rogers Spillway Project (in millions of dollars), and (ii) $0.133/MWh, provided that, in no

evidence of such capital investment cost overruns.	event shall the Energy Purchase Price increase as a result of adjustments pursuant to this Table 4 above $165.00 / MWh. The amount of $165/MWh will apply for the first 12 Months after the Effective Date and increase by 2.5% for each subsequent 12-Month period thereafter.

Table 5	
Commencing on the first Day following the Billing Month subsequent to Seller's receipt of ACoE Loan	Energy Purchase Price shall decrease by the product of (i) the outstanding quantum of the ACoE Loan, (ii) 0.50, (iii) the Loan Index Rate and (iv) 1 / 480,000
Loan Index Rate	Prevailing BB Interest rate at close – interest rate of ACoE Loan

REDACTED

EXHIBIT F

[redacted]

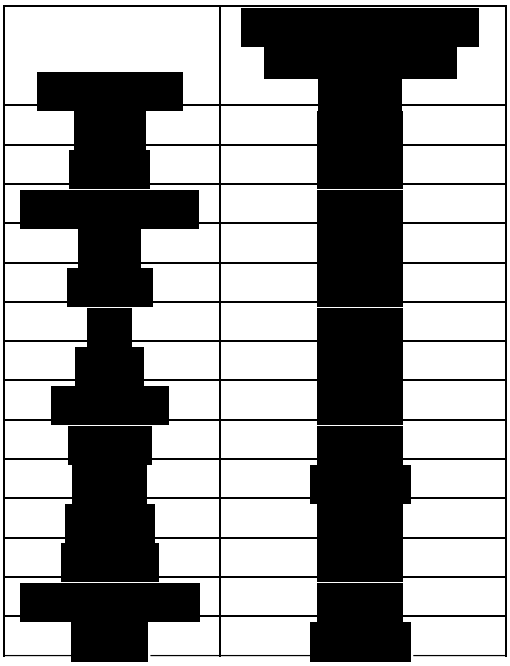
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ATTACHMENT A

[redacted]



MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Business Case- Asusmption sheet for variables common to all options

Case No.: U-21985
Exibit No.: A-3 (RTB-3)

Witness: RTBlumenstock
Date: October 2025

Discount Rate	7.38%
Cost of Capital	7.38%
Inflation (for Costs)	2.00%
Inflation (for Replacement Power)	0.00%
Financial Compensation Mechanism (FCM)	8.75%
Starting Replacement Power Cost ($/MWh)	$79.00
Yearly Production	439,462
Evaluation Starting Year	2027
Evaluation Ending Year	2086
PPA Starting Year	2027
PPA Ending Year	2056
PPA Escalation	2.50%

MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Business Case- Sale Annual Cash Flows

Case No.: U-21985
Exibit No.: A-4 (RTB-4)
Page: 1 of 1
Witness: RTBlumenstock
Date: October 2025

(a) Year Source	(b) CE Closing Costs Input	(c) Production Input	(d) PPA Price Input	(e) FCM c*d*0.0875/1000	(f) PPA Costs c*d/1000+e	(g) Replacement MWh Input	(h) Replacement Power Cost g*79.00	(i) Total Cost b+f+h
2027	$ 27,038	439462	$ 160.00	$ 6,152	$ 76,466	0	$ -	$ 103,504
2028	$ -	439462	$ 164.00	$ 6,306	$ 78,378	0	$ -	$ 78,378
2029	$ -	439462	$ 168.10	$ 6,464	$ 80,337	0	$ -	$ 80,337
2030	$ -	439462	$ 172.30	$ 6,626	$ 82,346	0	$ -	$ 82,346
2031	$ -	439462	$ 176.61	$ 6,791	$ 84,405	0	$ -	$ 84,405
2032	$ -	439462	$ 181.03	$ 6,961	$ 86,515	0	$ -	$ 86,515
2033	$ -	439462	$ 185.55	$ 7,135	$ 88,678	0	$ -	$ 88,678
2034	$ -	439462	$ 190.19	$ 7,313	$ 90,895	0	$ -	$ 90,895
2035	$ -	439462	$ 194.94	$ 7,496	$ 93,167	0	$ -	$ 93,167
2036	$ -	439462	$ 199.82	$ 7,684	$ 95,496	0	$ -	$ 95,496
2037	$ -	439462	$ 204.81	$ 7,876	$ 97,883	0	$ -	$ 97,883
2038	$ -	439462	$ 209.93	$ 8,073	$ 100,331	0	$ -	$ 100,331
2039	$ -	439462	$ 215.18	$ 8,274	$ 102,839	0	$ -	$ 102,839
2040	$ -	439462	$ 220.56	$ 8,481	$ 105,410	0	$ -	$ 105,410
2041	$ -	439462	$ 226.08	$ 8,693	$ 108,045	0	$ -	$ 108,045
2042	$ -	439462	$ 231.73	$ 8,911	$ 110,746	0	$ -	$ 110,746
2043	$ -	439462	$ 237.52	$ 9,133	$ 113,515	0	$ -	$ 113,515
2044	$ -	439462	$ 243.46	$ 9,362	$ 116,353	0	$ -	$ 116,353
2045	$ -	439462	$ 249.55	$ 9,596	$ 119,261	0	$ -	$ 119,261
2046	$ -	439462	$ 255.78	$ 9,836	$ 122,243	0	$ -	$ 122,243
2047	$ -	439462	$ 262.18	$ 10,082	$ 125,299	0	$ -	$ 125,299
2048	$ -	439462	$ 268.73	$ 10,334	$ 128,432	0	$ -	$ 128,432
2049	$ -	439462	$ 275.45	$ 10,592	$ 131,642	0	$ -	$ 131,642
2050	$ -	439462	$ 282.34	$ 10,857	$ 134,933	0	$ -	$ 134,933
2051	$ -	439462	$ 289.40	$ 11,128	$ 138,307	0	$ -	$ 138,307
2052	$ -	439462	$ 296.63	$ 11,406	$ 141,764	0	$ -	$ 141,764
2053	$ -	439462	$ 304.05	$ 11,691	$ 145,309	0	$ -	$ 145,309
2054	$ -	439462	$ 311.65	$ 11,984	$ 148,941	0	$ -	$ 148,941
2055	$ -	439462	$ 319.44	$ 12,283	$ 152,665	0	$ -	$ 152,665
2056	$ -	439462	$ 327.43	$ 12,590	$ 156,481	0	$ -	$ 156,481
2057	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2058	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2059	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2060	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2061	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2062	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2063	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2064	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2065	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2066	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2067	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2068	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2069	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2070	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2071	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2072	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2073	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2074	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2075	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2076	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2077	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2078	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2079	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2080	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2081	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2082	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2083	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2084	$ -	0	$ -	$ -	$ -	439462	$ 34,717	$ 34,717
2085	$ -	0	$ -	$ -	$ -	0	$ -	$ -
2086	$ -	0	$ -	$ -	$ -	0	$ -	$ -

MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Business Case- Decommissioning
Annual Cash Flows

Case No.: U-21985
Exibit No.: A-5 (RTB-5)

Page: 1 of 1
Witness: RTBlumenstock
Date: October 2025

(a) Year Source	(b) Capital Input	(c) O&M Input	(d) Decommissioning Input	(e) Production Input	(f) Replacement MWh 439462-e	(g) Replacement Power Cost f*79	(h) Total Cost b+c+d+g
2027	$ 12,738	$ 14,409	$ -	439462	0	$ -	$ 27,147
2028	$ 16,872	$ 14,697	$ 245	439462	0	$ -	$ 31,814
2029	$ 25,500	$ 14,991	$ 945	439462	0	$ -	$ 41,435
2030	$ 5,746	$ 15,291	$ 964	439462	0	$ -	$ 22,000
2031	$ 2,862	$ 15,596	$ 1,344	439462	0	$ -	$ 19,803
2032	$ 2,194	$ 15,908	$ 1,637	439462	0	$ -	$ 19,739
2033	$ 305	$ 16,227	$ 3,882	439462	0	$ -	$ 20,413
2034	$ 311	$ 17,794	$ 3,196	439462	0	$ -	$ 21,301
2035	$ 127	$ 21,955	$ 4,958	439462	0	$ -	$ 27,040
2036	$ 129	$ 23,688	$ 13,471	439462	0	$ -	$ 37,288
2037	$ 132	$ 24,581	$ 84,984	416392	23070	$ 1,823	$ 111,520
2038	$ -	$ 24,923	$ 587,598	312712	126750	$ 10,013	$ 622,534
2039	$ -	$ 24,237	$ 524,916	282930	156532	$ 12,366	$ 561,519
2040	$ -	$ 25,422	$ 286,206	235314	204148	$ 16,128	$ 327,756
2041	$ -	$ 23,535	$ 381,881	219767	219695	$ 17,356	$ 422,772
2042	$ -	$ 24,321	$ 389,206	170626	268836	$ 21,238	$ 434,765
2043	$ -	$ 25,457	$ 455,071	146092	293370	$ 23,176	$ 503,704
2044	$ -	$ 24,281	$ 166,496	117912	321550	$ 25,402	$ 216,179
2045	$ -	$ 7,375	$ 117,223	117912	321550	$ 25,402	$ 150,000
2046	$ -	$ 10,569	$ 461,832	75440	364022	$ 28,758	$ 501,159
2047	$ -	$ 5,151	$ 470,573	62367	377095	$ 29,791	$ 505,514
2048	$ -	$ 6,562	$ 107,594	62367	377095	$ 29,791	$ 143,947
2049	$ -	$ 837	$ 109,746	0	439462	$ 34,717	$ 145,300
2050	$ -	$ 853	$ 111,941	0	439462	$ 34,717	$ 147,512
2051	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2052	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2053	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2054	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2055	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2056	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2057	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2058	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2059	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2060	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2061	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2062	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2063	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2064	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2065	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2066	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2067	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2068	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2069	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2070	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2071	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2072	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2073	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2074	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2075	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2076	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2077	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2078	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2079	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2080	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2081	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2082	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2083	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2084	$ -	$ -	$ -	0	439462	$ 34,717	$ 34,717
2085	$ -	$ -	$ -	0	0	$ -	$ -
2086	$ -	$ -	$ -	0	0	$ -	$ -

MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Business Case- Relicensing
Annual Cash Flows

Case No.: U-21985
Exibit No.: A-6 (RTB-6)

Page: 1 of 1
Witness: RTBlumenstock
Date: October 2025

(a) Year Source	(b) Production Input	(c) Capital Input	(d) O&M Input	(e) Decommissioning Input	(f) Total c+d+e
2027	439,462	$ 74,177	$ 14,409	$ -	$ 88,585
2028	439,462	$ 224,251	$ 30,154	$ -	$ 254,405
2029	439,462	$ 156,869	$ 30,841	$ -	$ 187,710
2030	439,462	$ 83,927	$ 31,458	$ -	$ 115,385
2031	439,462	$ 22,447	$ 32,087	$ -	$ 54,534
2032	439,462	$ 27,998	$ 32,729	$ -	$ 60,727
2033	439,462	$ 133,281	$ 33,383	$ -	$ 166,665
2034	439,462	$ 165,642	$ 34,051	$ -	$ 199,693
2035	439,462	$ 192,603	$ 34,732	$ -	$ 227,335
2036	439,462	$ 49,754	$ 35,426	$ -	$ 85,180
2037	439,462	$ 30,489	$ 36,135	$ -	$ 66,624
2038	439,462	$ 32,243	$ 36,858	$ -	$ 69,100
2039	439,462	$ 32,887	$ 37,595	$ -	$ 70,482
2040	439,462	$ 33,545	$ 38,347	$ -	$ 71,892
2041	439,462	$ 32,768	$ 39,114	$ -	$ 71,882
2042	439,462	$ 42,123	$ 39,896	$ -	$ 82,019
2043	439,462	$ 53,083	$ 40,694	$ -	$ 93,776
2044	439,462	$ 43,806	$ 41,508	$ -	$ 85,313
2045	439,462	$ 201,523	$ 42,338	$ -	$ 243,860
2046	439,462	$ 59,362	$ 43,185	$ -	$ 102,547
2047	439,462	$ 35,536	$ 44,048	$ -	$ 79,584
2048	439,462	$ 36,246	$ 44,929	$ -	$ 81,176
2049	439,462	$ 36,971	$ 45,828	$ -	$ 82,799
2050	439,462	$ 37,711	$ 46,744	$ -	$ 84,455
2051	439,462	$ 38,465	$ 47,679	$ -	$ 86,144
2052	439,462	$ 39,234	$ 48,633	$ -	$ 87,867
2053	439,462	$ 57,795	$ 49,606	$ -	$ 107,400
2054	439,462	$ 40,819	$ 50,598	$ -	$ 91,417
2055	439,462	$ 245,655	$ 51,610	$ -	$ 297,265
2056	439,462	$ 72,363	$ 52,642	$ -	$ 125,004
2057	439,462	$ 43,318	$ 53,695	$ -	$ 97,012
2058	439,462	$ 83,436	$ 54,769	$ -	$ 138,205
2059	439,462	$ 45,068	$ 55,864	$ -	$ 100,932
2060	439,462	$ 496,476	$ 56,981	$ -	$ 553,458
2061	439,462	$ 112,900	$ 58,121	$ -	$ 171,020
2062	439,462	$ 47,826	$ 59,283	$ -	$ 107,110
2063	439,462	$ 70,451	$ 60,469	$ -	$ 130,920
2064	439,462	$ 49,758	$ 61,678	$ -	$ 111,437
2065	439,462	$ 299,452	$ 62,912	$ -	$ 362,364
2066	439,462	$ 88,209	$ 64,170	$ -	$ 152,380
2067	439,462	$ 52,804	$ 65,454	$ -	$ 118,258
2068	439,462	$ 53,860	$ 66,763	$ -	$ 120,623
2069	439,462	$ 54,937	$ 68,098	$ -	$ 123,035
2070	439,462	$ 56,036	$ 69,460	$ -	$ 125,496
2071	439,462	$ 57,157	$ 70,849	$ -	$ 128,006
2072	439,462	$ 58,300	$ 72,266	$ -	$ 130,566
2073	439,462	$ 85,880	$ 73,711	$ -	$ 159,591
2074	439,462	$ 60,655	$ 75,186	$ -	$ 135,841
2075	439,462	$ 320,788	$ 76,689	$ -	$ 397,477
2076	439,462	$ 53,410	$ 78,223	$ -	$ 131,633
2077	439,462	$ 9,169	$ 79,787	$ 14,888	$ 103,844
2078	439,462	$ 9,352	$ 81,383	$ 15,185	$ 105,921
2079	439,462	$ 9,539	$ 83,011	$ 15,489	$ 108,039
2080	439,462	$ 9,730	$ 84,671	$ 15,799	$ 110,200
2081	439,462	$ 9,925	$ 86,365	$ 62,533	$ 158,822
2082	439,462	$ -	$ 88,092	$ 47,346	$ 135,438
2083	439,462	$ -	$ 89,854	$ 49,671	$ 139,525
2084	439,462	$ -	$ 91,651	$ 52,070	$ 143,721
2085	0	$ 161,221	$ 173,137	$ 4,229,716	$ 4,564,074
2086	0	$ 21,660	$ 53,430	$ 4,533,416	$ 4,608,506

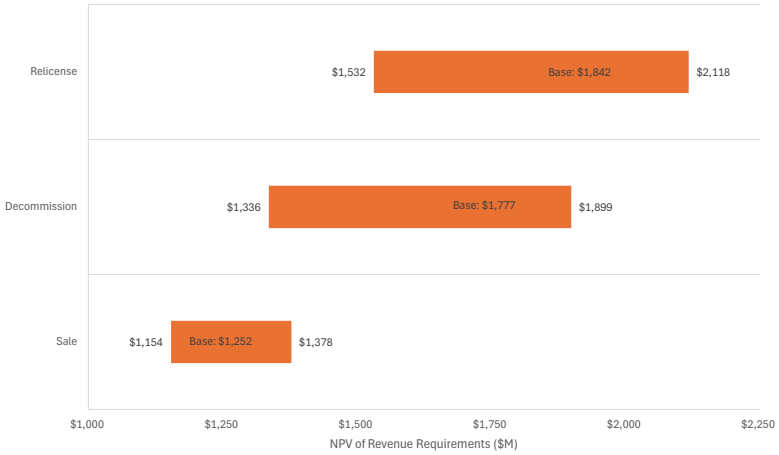
MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Business Case- Summary of Net Present Value of Cash Flows for All Options, including Variances

Case No.: U-21985
Exibit No.: A-7 (RTB-7)

Page: 1 of 1
Witness: RTBlumenstock
Date: October 2025

NPV ($ millions)

	Low	Delta	High	Base
Sale	$1,154	$224	$1,378	$1,252
Decommission	$1,336	$563	$1,899	$1,777
Relicense	$1,532	$587	$2,118	$1,842



Sensitivity Assumptions:

Sale Base

Discount Rate	7.38%
Cost of Capital	7.38%
Inflation (for Costs)	2.00%
Inflation (for Replacement Power)	0.00%
FCM	8.75%
Starting Replacement Power	$79.00
Yearly Production	100.00%

Decommission Base

Discount Rate	7.38%
Cost of Capital	7.38%
Inflation (for Costs)	2.00%
Inflation (for Replacement Power)	0.00%
Starting Replacement Power	$79.00
Yearly Production	100.00%
Environmental Uncertainties Applied	Yes

Relicense Base

Discount Rate	7.38%
Cost of Capital	7.38%
Inflation (for Costs)	2.00%
Inflation (for Replacement Power)	0.00%
Environmental Uncertainties Applied	Yes
Result Multiplier	1.00

'Low End' Sale

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	No Change from Base
FCM	No Change from Base
Starting Replacement Power	$60.00
Yearly Production	90.00%

Low End' Decommission

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	No Change from Base
Starting Replacement Power	$60.00
Yearly Production	No Change from Base
Environmental Uncertainties Applied	No

Low End' Relicense

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	No Change from Base
Environmental Uncertainties Applied	No
Result Multiplier	0.85

'High End' Sale

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	2.00%
FCM	No Change from Base
Starting Replacement Power	$80.00
Yearly Production	110.00%

'High End' Decommission

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	2.00%
Starting Replacement Power	$80.00
Yearly Production	No Change from Base
Environmental Uncertainties Applied	No Change from Base

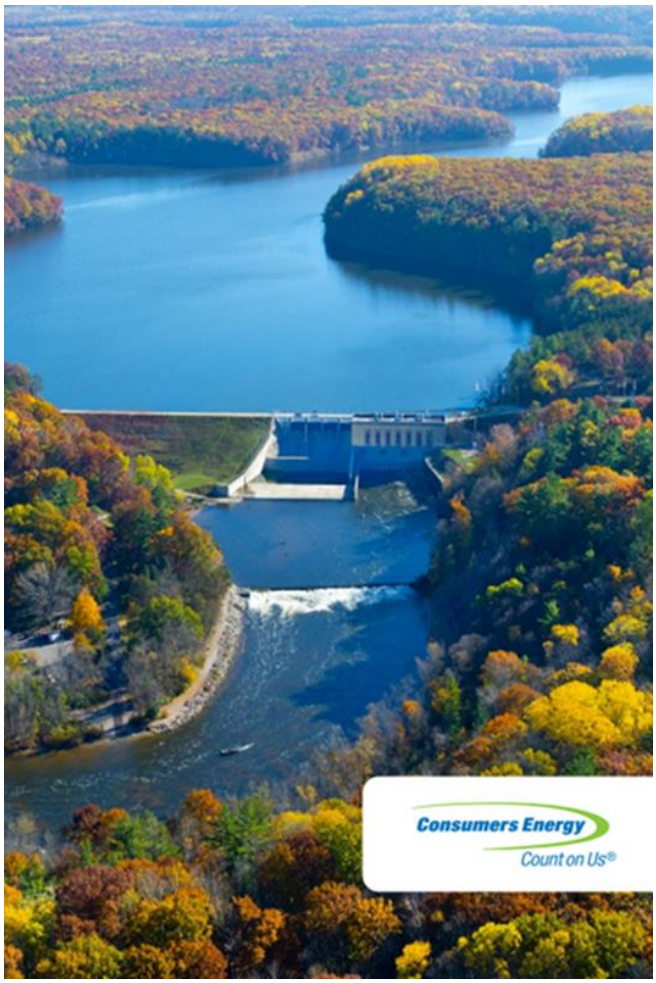
High End' Relicense

Discount Rate	No Change from Base
Cost of Capital	No Change from Base
Inflation (for Costs)	No Change from Base
Inflation (for Replacement Power)	No Change from Base
Environmental Uncertainties Applied	No Change from Base
Result Multiplier	1.15

CONSUMERS ENERGY COMPANY

2023 HYDROPOWER ROADMAP FOR 13 HYDROELECTRIC DAM SITES

JUNE 16, 2023



wsp

2023 HYDROPOWER ROADMAP FOR 13 HYDROELECTRIC DAM SITES

CONSUMERS ENERGY COMPANY

REPORT

31404348.007
DATE: JUNE 16, 2023

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The information provided in this report was compiled from existing documents, data collected during literature review and research, and data provided by Consumers and by applying currently accepted industry standard regulatory practices and economic principles. This report represents the best professional judgment of WSP personnel available at the time of its preparation. WSP reserves the right to modify the contents of this report, in whole or in part, to reflect any new information that becomes available. If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work. Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP, a large, interdisciplinary engineering, environmental and advisory firm with robust experience with hydropower assets throughout North America, similar to Consumers' portfolio, to review Consumers' reports and analyze different outcome scenarios and characterize how to achieve them. Scenarios analyzed included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

Our team reviewed the existing environmental and regulatory license conditions, Consumers' condition assessments, revenue, and strategic plan to establish a baseline understanding of the assets, their performance, and risks to help define the scenarios and issues the roadmap considers. In addition to developing the groundwork for the roadmap, we developed site summaries, risk matrices and economic model to help inform our opinion of the most appropriate outcome to pursue for each site. Our opinions are founded on the best available existing information and the timelines available to develop our model.

Scenarios evaluated include:

- Relicense – Upgrade units
- Relicense – Overhaul units
- Divest
- Surrender License: Non-Generation
- Surrender License: Partial Decommissioning
- Surrender License: Full Decommissioning

'Relicense – Maintain' was a scenario initially considered but later dismissed as unsustainable and ultimately would result in either of the relicensing options (upgrade or overhaul). The term 'Relicense – Maintain' may appear in the economic model as a relic to this earlier potential scenario.

Risks to Consumers were characterized qualitatively by evaluating five broad categories: Environment, Dam Safety, Economics, People, and Reputation. Qualitative metrics included red (most risk), orange, yellow, and green (least risk) for each of the 13 hydropower Projects. No weighting was considered for the risks nor was a quantitative score generated on behalf of Consumers. The risk matrix was developed to highlight differences in the scenarios.

In addition to characterizing risks, the roadmap utilized an economic model to quantify the potential costs, reported as a net present value (NPV), for each scenario. Assumptions for the model were based on our review of Consumers cost information, literature review and industry standards. Overall, the nature of the available information used in the model was planning level (high-level estimates) but implemented consistently across all sites. Results from the economic models showed that all scenarios generated a negative NPV. This outcome is largely a function of the costs to operate and maintain the assets in combination with the forecast revenue declining over the next 40 years. Implementing upgrades to the equipment or overhauling the equipment would improve efficiencies and generate more electricity; however, these increases typically result in larger negative NPV over the next 50 years due to the overall cost and inability to recover the investment costs due to the declining revenue. From strictly NPV perspective, favorable scenarios are ones that minimize investment such as the surrender – non-generating alternative; however, some sites still require large capital improvements to meet current dam safety regulations before the powerhouses can be disconnected and all sites would require ongoing maintenance of the dams without a revenue stream to offset these costs. Sensitivity analysis indicates that regular 1-4 percent annual increases in revenue results in many projects reaching situations where the NPV could be favorable.

Divesting is an alternative to relicensing and surrendering. One pathway to eliminate responsibility of relicensing and surrendering is to sell the assets. Large hydropower portfolios have exchanged hands over the last few years making headlines within the industry as appetites for renewable energy and environmental, social, and governance goals gain traction in the financial markets.
The deadline to file a notice of intent to relicense or surrender is still a few years away. This allows for investigating selling the hydropower portfolio providing a potentially viable option to minimize expenditures and risk with owning and operating a hydropower portfolio.

Our analysis considered the Project sites conditions, environmental requirements, forecast issues for a future license and the costs to implement them. So too were the risks of operating the dams. The roadmap is less a process of how to get to a preferred outcome and more of a set of decision tools to help Consumers make business decisions regarding which outcome to pursue. Overall, our opinion is informed without Consumers input on priorities, risk tolerances, revenue projections, or other business fundamentals that could be considered when making choices for which scenario or outcome provides the best value to Consumers. The lowest risk scenario is one in which Consumers doesn't own dams and the easiest way to achieve this is to divest the portfolio. Should negotiations fail to consummate a deal for the portfolio, we provide a summary of value outcomes for each site in Table ES-1. Our opinions balance risks and costs and are independent from Consumers without insights into their preferences for risk or knowledge of their preferred business outcomes.

Consumers Energy used the models produced by WSP to add overheads, update escalation and discount rates which matched those used by Consumers Energy, added in energy capacity value,

updated revenue rates to reflect assumptions used in their IRP for years beyond 2050, and added a general capital line for anticipated, yet undefined capital costs at each site based on more recent trends in capital project spend. The intent of Consumers Energy exercise was to see how the model results change when incorporating overheads and revenue for capacity, while also adding in some of the other known unknowns regarding overall hydro expenses. The results between WSP and Consumer Energy models show that all sites are negative NPV for all scenarios. However, with addition of some of these costs, the ordering of the scenarios based on NPV changed in many instances.

Table ES-1. Summary Outcomes

Site	WSP First Opinion
Rogers	Surrender – Full Decommission
Hardy	Surrender – Full Decommission
Croton	Divest or Surrender – Non-Power Generation Alternative
Hodenpyl	Divest or Surrender – Full Decommissioning
Tippy	Divest or Partial Decommissioning
Mio	Divest or Surrender – Full Decommissioning
Alcona	Divest or Surrender – Full Decommissioning
Loud	Divest or Surrender – Full Decommissioning
Five Channels	Divest or Surrender – Non-Power Generation Alternative
Cooke	Divest or Relicense Overhaul
Foote	Divest or Surrender – Non-Power Generation Alternative
Allegan/Calkins Bridge	Divest or Surrender – Non-Power Generation Alternative
Webber	Divest or Surrender – Full Decommissioning

TABLE OF CONTENTS

1 ISSUE STATEMENT 1

2 INTRODUCTION 3

3 FUTURE SCENARIOS 4

3.1 Relicense 4

3.2 Surrender 4

3.3 Divest Strategy 5

4 RISK AND DECISION MATRIX 7

5 ROAD MAP FOR SCENARIOS 9

5.1 Relicense 9

5.1.1 Relicensing Steps 9

5.1.2 Dam Safety Steps 10

5.1.3 Generation Enhancement, Operation, and Maintenance Steps 10

5.1.4 Issues/Risks 11

5.1.5 Notes 11

5.2 Surrender 11

5.2.1 Preliminary Site Investigations 12

5.2.2 Internal Strategy, Overall Surrender Plan, Process, and Schedule 12

5.2.3 Prepare Stakeholder List, Initiate Consultation and Communicate Plans, File Notice of Intent with FERC 12

5.2.4 Conduct Environmental Site Investigations and Studies 13

5.2.5 Evaluate Alternatives and Prepare Preliminary Decommissioning Plans and Conduct Detailed Stakeholder Consultation 13

5.2.6 Prepare Final Surrender Application to FERC 13

5.2.7 Finalize Plan of Action and Apply for Applicable Local, State, and Federal Regulatory Permits for Execution 14

5.2.8 Implement Plans and FERC Decommissioning Orders 14

5.3 Divest 14



6 SITE SUMMARIES 15

7 ECONOMIC MODEL 16

7.1 Introduction 16

7.2 General Model Assumptions 16

7.2.1 Timing Assumptions 17

7.2.1 Relicensing Cost Assumptions 18

7.2.2 Surrender Cost Assumptions 21

7.2.3 Revenue Assumptions 21

7.2.4 Escalation and Discount Rates 22

7.2.5 Sensitivity 23

8 RESULTS AND INTERPRETATION 24

8.1 Base Cases 24

8.1.1 Sensitivity Results 27

8.1.1.1 Break Even Analysis under Current Energy Rate 27

8.1.2 Sensitivity - Conservative 27

8.1.2.1 CapEx is Accurate and No Escalation in Revenue 27

8.1.3 Sensitivity – Manipulated 29

8.1.4 CapEx Increases by 50% and Revenues Project to Escalate 4% 29

8.1.4.1 Turbine Upgrade and Overhaul (CapEx) Increases by 50% and Revenues not Escalated Revenue (0%) 32

9 RISK ANALYSIS 34

9.1 Muskegon River System 34

9.1.1 Rogers Risk Summary 34

9.1.2 Hardy Site Summary 35

9.1.3 Croton Site Summary 37

9.1.4 Muskegon River System Overall Summary 38

9.2 Manistee River System 39

9.2.1 Hodenpyl Summary 39

9.2.2 Tippy Site Summary 41

9.2.3 Manistee River System Overall Summary 42

9.3 Au Sable River System 43

9.3.1 Mio Site Summary 43



9.3.2 Alcona Site Summary 45
9.3.3 Loud Site Summary 46
9.3.4 Five Channels Site Summary 48
9.3.5 Cooke Site Summary 49
9.3.6 Foote Site Summary 50
9.3.7 Au Sable River System Overall Summary 52
9.4 Grand River Webber Dam 53
9.4.1 Webber Site Summary 53
9.5 Kalamazoo River – Allegan (Calkins Bridge) Dam 54
9.5.1 Calkins Bridge Site Summary 54
10 TIMELINE FOR ROADMAP SCENARIOS 57
10.1 Divest 57
10.2 Relicense 57
10.3 Surrender 58
11 CONCLUSION 59
11.1 Next Steps 62
11.1.1 Divest Scenario 63
11.1.1.1 Strategic Considerations 63

TABLES

TABLE 1. PROJECTED TRENDS IN COSTS AND REVENUES RELATED TO HYDROPOWER OWNERSHIP AND OPERATIONS 1
TABLE 2. BENEFITS OF HYDROPOWER TO CONSUMERS 2
TABLE 3. RISK AND DECISION MATRIX 7
TABLE 4. TURBINE UPGRADE COSTS FOR UPGRADE AND OVERHAUL RELICENSE OPTIONS 18
TABLE 5. NPV OF FIVE SCENARIOS FOR EACH OF THE DAMS 24
TABLE 6. POSITIVE NPV SCENARIOS 27
TABLE 7. FIXED ENERGY RATES TO BREAK EVEN 28
TABLE 8. NPV FOR FOUR PERCENT ESCALATION AND TURBINE UPGRADE OR OVERHAUL COST INCREASE BY 50 PERCENT 29
TABLE 9. NPV FOR NO ESCALATION AND CAPEX INCREASE BY 50 PERCENT 32
TABLE 10. ROGERS ISSUE MATRIX SUMMARY 34
TABLE 11. ROGERS RISK MATRIX..... 35
TABLE 12. HARDY ISSUE MATRIX SUMMARY 36
TABLE 13. HARDY RISK MATRIX 36
TABLE 14. CROTON ISSUE MATRIX SUMMARY 37
TABLE 15. CROTON RISK MATRIX..... 38
TABLE 16. MUSKEGON RIVER SYSTEM ISSUE MATRIX SUMMARY 39
TABLE 17. HODENPYL ISSUE MATRIX SUMMARY 40
TABLE 18. HODENPYL RISK MATRIX 40
TABLE 19. TIPPY ISSUE MATRIX SUMMARY.. 41
TABLE 20. TIPPY RISK MATRIX..... 42
TABLE 21. MANISTEE RIVER SYSTEM ISSUE MATRIX SUMMARY 42
TABLE 22. MIO ISSUE MATRIX SUMMARY 44
TABLE 23. MIO RISK MATRIX 44
TABLE 24. ALCONA ISSUE MATRIX SUMMARY 45
TABLE 25. ALCONA RISK MATRIX 46
TABLE 26. LOUD ISSUE MATRIX SUMMARY.. 46
TABLE 27. LOUD RISK MATRIX..... 47

TABLE 28. FIVE CHANNELS ISSUE MATRIX SUMMARY 48
TABLE 29. FIVE CHANNELS RISK MATRIX 49
TABLE 30. COOKE ISSUE MATRIX SUMMARY 49
TABLE 31. COOKE ISSUE MATRIX..... 50
TABLE 32. FOOTE ISSUE MATRIX SUMMARY 51
TABLE 33. FOOTE ISSUE MATRIX 51
TABLE 34. AU SABLE RIVER ISSUE MATRIX SUMMARY 52
TABLE 35. WEBBER ISSUE MATRIX SUMMARY 53
TABLE 36. WEBBER ISSUE MATRIX 54
TABLE 37. CALKINS BRIDGE ISSUE MATRIX SUMMARY 55
TABLE 38. CALKINS BRIDGE RISK MATRIX ... 56
TABLE 39. PLANNING LEVEL SCHEDULE FOR SURRENDER PROCESS..... 58
TABLE 40. RESULTS OF DECISION MATRIX .. 59

FIGURES

FIGURE 1. DECISION TREE FOR THE SCENARIOS CONSIDERED 6
FIGURE 2. ENERGY RATE FORECAST PER MWH FOR THE CONSUMERS HYDRO PORTFOLIO 22
FIGURE 3. SENSITIVITY MODEL RUNS 23
FIGURE 4. BREAK EVEN RATES FOR THE RELICENSING SCENARIOS WITHOUT ESCALATION IN THE CAPEX SPEND OR RATE OF REVENUE OVER TIME..... 29
FIGURE 5. NPV FOR FOUR PERCENT ESCALATION AND CAPEX INCREASE BY 50 PERCENT 31
FIGURE 6. NPV FOR NO ESCALATION AND CAPEX INCREASE BY 50 PERCENT 33

APPENDICES

APPENDIX A ECONOMIC MODEL
APPENDIX B SITE SUMMARIES

1 ISSUE STATEMENT

Consumers Energy Company (Consumers) hydropower projects average over 100 years old, many of which utilize original equipment. The cost to maintain equipment of this age is trending upward as the facilities continue to age with equipment reliability and performance decreasing over time. Federal Energy Regulatory Commission (FERC) license limitations on operations have impacted how the projects have operated over time and have evolved from peaking to more run-of-river, meaning most of the power generating equipment in place is not optimized for the current operational needs, which limits efficiency. The regulatory environment continues to evolve, uncovering impacts associated with hydropower operation on the environment; and this trend looks to continue. Dam safety regulations are also continuing to evolve as risks are identified that may not have been as evident or well understood in the past. The facilities will require not only routine maintenance due to the aging infrastructure but new, larger spillways to accommodate the changing regulatory requirements. The revenue from the operations is forecasted to decrease over time as Consumers implements the Integrated Resource Plan (IRP), which includes the decommissioning of coal and the construction and adoption of gas, wind, and solar. Table 1 summarizes the historical and projected qualitative trends in costs and revenues facing the 13 river hydropower sites. Table 2 summarizes some of the benefits of hydropower that are considered in our overall assessment and opinion balanced with the reality of the benefit to Consumers.

Table 1. Projected Trends in Costs and Revenues Related to Hydropower Ownership and Operations

Cost Driver	Overall Cost Implication
Age and Condition of Equipment	↑
Environmental and Recreation Mitigation Measures	↑
Dam Safety Risk Mitigation	↑
Outages	↑
Labor, Insurance, Taxes, Supplies, Suppliers	↑
Reputational Related Commitments (donations, education, partnerships)	↑
Climate Risks (droughts, severe storms)	↑
Revenue Driver	**Overall Revenue implication**
Operational Run Time	↓
Efficiency of Units	↓
Revenue from Hydropower	↓

Table 2. Benefits of Hydropower to Consumers

Theoretical Benefit	Consumers Reality
Assets are paid for and fully depreciated (hydropower is affordable)	The assets are 100+ years old and require tremendous amounts of maintenance and capital expenses to maintain
Sites with peaking capabilities can capitalize on market conditions (agile and responsive)	Regulatory pressure is to operate in run-of-river with limited abilities to peak
Assets are designed for long duration runtimes as evidenced by running 100+ years (dependable)	Assets are using original equipment which is not optimized for the facilities and require significant labor-intensive maintenance due to lack of newer generating equipment and proper operations and maintenance strategy.
Ancillary services (secondary benefits)	With limited peaking comes limitations on ability to assist with variable energy integration and transmission grid support
Recreation benefits	Consumers is required by their FERC License to provide adequate and safe recreation to the lands and waters which is forecasted to be a growing expense for capital projects and maintenance
Local economic benefits (taxes, recreation, commercial businesses)	Commercial and residential developments exist at some reservoirs with businesses directly related to the recreation opportunities at the reservoirs. These stakeholders depend on the reservoirs which supports Consumers reputation in supporting economic development.
Drinking water, flood control, irrigation support	Reservoirs designed for full pool operations with run-of-river operations don't provide flood control. Reservoirs are not used for drinking water or irrigation
Hydropower is a clean, renewable, and domestic supply of energy	Hydropower is approximately 1% of Consumers energy output from the entire generating portfolio but likely requires more than 1% of Consumers annual expenses

2 INTRODUCTION

Consumers has requested that WSP provide an independent review of Consumers 13 river hydroelectric projects and assessment of possible scenarios as the sites approaching major planning milestones and regulatory requirements that can impact the business for the next 50 years. These sites are located throughout the Lower Peninsula of Michigan and range in age from approximately 88 to 115 years old. Eleven of the thirteen sites will enter FERC relicensing with internal preparations starting in the next four to five years.

WSP has prepared this report to assist Consumers in describing potential outcomes, potential considerations for each outcome, net present value (NPV) of each outcome, and potential risks. We reviewed three potential outcomes for the portfolio including relicense them and continue to operate them for another 50 years, surrender the licenses (and make surrender plans in consultation with stakeholders), or divest. Our opinion[1] is based on a review of the existing conditions (e.g., age of the developments, condition assessments), potential to increase efficiencies (and thereby revenues), environmental conditions and risks associated with each option (e.g., likely future license conditions and mitigation requirements), the communities and people that utilize the rivers and reservoirs where these developments are located, and the reputational risks that might be associated with each outcome. Consumers has contracted with another firm to investigate economic impacts to the communities around the reservoirs.

Several goals were developed by Consumers and WSP for the roadmap which became the basis of this deliverable.

- Identify highest and best value to Consumers for each hydro facility. Highest and best value identified through consultation with Consumers staff, WSP opinion of relicensing and surrendering outcomes and risks, and results of economic NPV costs/value modeling.
- Consumers is a regulated utility provider with a commitment via the Michigan Public Service Commission (MPSC) to deliver the best value in reliable, affordable, and clean electricity to its customers. Results from the economic modeling were used to support our opinions of outcomes for the 13 river developments.
- Identify potential outcomes for each site including relicense, surrender license, and divest (sub-outcomes for all 3 primary outcomes). Utilize the economic model to provide estimated NPV for each outcome/sub-outcome outlined.

[1] WSP provides an opinion based on review of available information at the time of writing and that the inclusion of costs or analysis of cost estimates should be considered high level or Class 5 or screening or feasibility level of detail. WSP did not prepare cost estimates for Consumers, but reviewed cost estimates prepared by or for Consumers and can confirm they are from reputable sources with reasonableness to be used in planning outcomes from this roadmap. Appendix A-1 provides perspective regarding the WSP independent review of costs.

3 FUTURE SCENARIOS

3.1 RELICENSE

FERC authorizes non-federal dams and issues licenses containing the conditions under which to operate hydroelectric projects. License terms are based on the amount of redevelopment, new construction, new capacity, or environmental mitigation, and other factors such as coordination of license terms for multiple projects in the river basin. Hydropower licenses contain terms and conditions (articles) that require environmental measures to protect, mitigate effects on, or enhance environmental resources; engineering measures to ensure safe construction and continued operation of the project; and certain administrative requirements (such as filing exhibit drawings, paying annual charges to FERC, establishing a project amortization reserve, and filing a Public Safety Plan). Mandatory terms and conditions may also be prescribed by certain state and federal agencies and become part of the license. Consumers currently holds FERC licenses for all their hydropower assets.

Scenarios considered under the relicense outcome include assumptions about the term of the license, current environmental conditions and new mitigation measures, the age and efficiency of the generating equipment as well as dam safety requirements. Some dam safety requirements need to be implemented under current license terms such as increased spillways and all proposed projects need approval from FERC. Scenarios evaluated under the relicensing of the hydropower facility include (1) upgrading the powerhouse equipment; or (2) overhauling the equipment. A potential third scenario, operate and maintain, was conceived as a potential option to investigate; however, this scenario was dismissed as unrealistic and unquantifiable for comparison with the other options because of the units age and condition and could require an upgrade or an overhaul as soon as the first year triggering the other options. Its possible the units could be operated and maintained in the short term but not as a realistic scenario for 50 years for the model purposes. More detailed descriptions of these alternatives are as follows:

1. Relicense - Upgrade: Upgrade the powerhouse units with new, more efficient equipment optimizing the generation at the site; or
2. Relicense – Overhaul: Overhaul the existing equipment with existing specifications and types of equipment; or

Both relicensing scenarios would include compliance with environmental and dam safety regulations in the current and future anticipated FERC license.

Figure 1 summarizes the decision tree.

3.2 SURRENDER

Scenarios evaluated under the consideration for the surrender of the hydropower facility include: (1) surrender license but disconnect generation equipment; (2) partial removal of the dam; and (3) full

removal of all dams, powerhouse, and structures to restore the river channel to its natural state. More detailed descriptions of these alternatives are as follows:

- Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
- Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
- Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

3.3 DIVEST STRATEGY

Buying and selling hydropower assets are common transactions in the renewable energy business. Considerations for divesting out of the portfolio include providing a mix of assets in the sale, as the transaction shouldn't include just the best or worst performing assets. Hydropower portfolio transactions have been in renewable energy news platforms in the recent years as investors look for investments in renewable sources with Environmental, Social and Governance (ESG) growth opportunities. Consumers has a history of selling off dozens of small hydropower facilities. Given that relicensing or surrender decisions can be made a few years from now, putting the portfolio on the market in the near term could be the most favorable path forward for Consumers to transition away from costly hydropower generation into more cost-effective generation. Some of the first steps would be to prepare a data room for prospective buyers to review records and consult with a broker or bank experienced with energy portfolio sales.

Over the past five years, a number of hydropower portfolios have traded hands. Here is a partial list of those with information publicly available:

- 2022 – Hydro-Quebec purchases Great River Hydro LLC's portfolio of 13 generating stations with capacity to generate 589 megawatts. Total price $2 billion.
- 2019 – Ontario Power Generation purchases Cube Hydro's portfolio of 19 hydropower facilities with a combined capacity of 385 megawatts. Total price $1.2 billion
- 2022 - Confidential transaction WSP performed services to include a portfolio of three vintage plants with combined capacity of 14 megawatts. Total price $30 million.

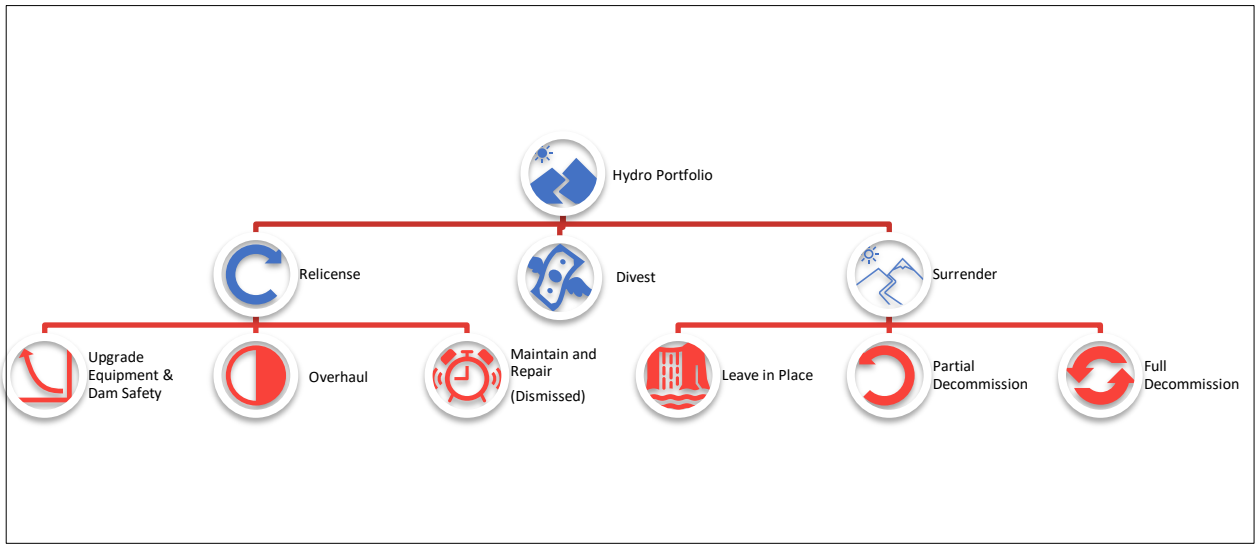


Figure 1. Decision Tree for the Scenarios Considered

4 RISK AND DECISION MATRIX

Table 3 summarizes WSP's decision matrix risk attributes, their definition, and the risk levels that we used to score each hydropower project. Risk categories to Consumers include Environment, Dam Safety, Economics, People, and Reputation, all weighted equally for this exercise. Levels of risk ranged from none (green), low (yellow), moderate (orange), and high (red). Risks are interpreted as current situation and under the future scenario (relicense or surrender with subcategory options). Results of each site's risk matrix is provided in section *8 Results and Interpretation.*

Table 3. Risk and Decision Matrix

Risk Attribute	Criteria Definition	Color Assessment
Environment	Risks could include required mitigation measures and responsibilities such as failure to meet water temperature and dissolved oxygen standards or compliance, toxic sediments, invasive species, fish passage, and federal agency mandatory conditions.	**Green** – All environmental concerns would be addressed through enactment of the scenario. **Yellow** – Most environmental concerns would be addressed. **Orange** – Most environmental concerns will not be addressed without some management/ mitigation being implemented with the scenario. **Red** – Environmental concerns would remain unchanged or pose an additional risk to Consumers.
Dam Safety	Risks include the regulatory requirements to upgrade the structures and/or modify operations	**Green** – No FERC Part 12 issues, no structural issues in condition assessment, no spillway issues **Yellow** – Small or easily remedied FERC Part 12 issues, or issues in condition assessments or spillway **Orange** – Moderate FERC Part 12 issues, important repairs recommended in condition assessments, potential risks associated with not passing the Inflow Design Flood. **Red** – Significant FERC Part 12 issues, unable to pass the Inflow Design Flood, urgent needs identified in condition assessments.

Risk Attribute	Criteria Definition	Color Assessment
Economics	Positive or Negative net present values with the calculated NPV included for reference	**Green** – Net Present Value is positive. **Orange** – NPV could be positive or better than the negative NPV in red. Typically used for Divest scenario. **Red** – Net Present Value is negative.
People	Includes Consumers staff (e.g., operators), contractors, and the public (e.g., downstream, shoreline property owners, commercial connections).	**Green** – employees of Consumers are safe when working on site; contractors are safe when working on site, public is safe when recreating at facilities. **Yellow** – creates somewhat safe conditions for Consumers employees, contractors and public. **Orange** – creates moderately unsafe conditions for Consumers employees, contractors and public. **Red** – creates unsafe working conditions for Consumers employees, contractors, downstream properties, and the public
Reputation	Includes consideration of duration and intensity of potential positive or negative reflection on Consumers' reputation.	**Green** – very positive **Yellow** – somewhat positive **Orange** – somewhat negative **Red** – very negative

5 ROAD MAP FOR SCENARIOS

5.1 RELICENSE

Under this option, Consumers commits to upholding its responsibility to maintain and operate the dams including all conditions of the future licenses for an assumed 50-year period. FERC license holders are responsible for implementing the conditions in each license as well as meet FERC dam safety requirements as long as the license is active. Relicensing requires continuing to maintain dam safety compliance, which depending on the timing or regulations could be full spillway replacement to Risk Informed Decision Making (RIDM). Additional costs associated with relicensing include upgrades to the generating equipment to maximize generation as well as constructing license terms and conditions which could include new requirements to add fish passage, improve water quality conditions, and enhance recreation resources. The following subsections list some of the steps taken ahead of applying for a new FERC license, maintaining compliance with dam safety requirements and potential upgrades or overhauls to the turbine generator equipment to maximize revenue during a future license term.

5.1.1 RELICENSING STEPS

- Define internal strategy, overall plan, licensing process, and schedule (assumes Integrated Licensing Process by river system).
- Prepare plan for relicensing processes (e.g., resource studies, operational and dam safety proposals) and proposal for future license.
- Prepare stakeholder list and proposed enhancements at the projects to capture in licensing (e.g., upgrades, operational changes, land/water management).
- Decide on turbine upgrades or repairs to propose in the licensing process, if not before. The process for this is discussed below in 5.1.3 Generation Enhancement Steps
- Conduct early outreach to stakeholders for existing data to include in the Pre-Application Document.
- Prepare Pre-Application and Notice of Intent, and file with FERC.
- Complete FERC Scoping, Study Planning and Execution, Field Data Collection, Reporting and Development of preliminary Protection, and Mitigation and Enhancement (PMEs) measures for Draft License Applications.
- Complete discussions and strategy around PMEs and evaluate pursuing settlement agreement(s).
- Finalize License Applications.
- Implement license conditions and overall compliance.

The timing of implementing the pre-license strategy through the application filing with FERC typically occupies the better part of seven years prior to the license expiration date. Given the number of projects expiring at the same time within the river hydropower portfolio, additional time may be required ahead of starting. Certain pre-filing activities could prove useful and efficient during the licensing process such as work to develop standardized project descriptions and understandings. Currently, there are a wide range of sources to review. Preparing templates and reference information for each project would reduce

introducing errors during the relicensing process that could cause confusion or delays from FERC if there are inconsistencies in the exhibits.

5.1.2 DAM SAFETY STEPS

- Review current FERC dam safety regulations, i.e., new Part 12D inspection guidance, including Comprehensive Assessments which require risk assessment and restarting the Potential Failure Mode Analyses (PFMA) process.
- Conduct a thorough review of existing documentation (FERC Dam Safety Commitments, compliance), PFMA, Probable Maximum Flood (PMF) studies, spillway gate certifications, Dam Safety and Surveillance Monitoring Programs and Reports, Stability Analyses (embankment, spillway, powerhouse, etc.), Emergency Action Plans, etc. to identify current dam safety non-compliances on file with FERC and whether any additional dam safety non-compliances may exist.
- Review the Strategy Projection to confirm that identified dam safety non-compliance issues are scheduled to be addressed.
- Complete projects to address dam safety non-compliances.

5.1.3 GENERATION ENHANCEMENT, OPERATION, AND MAINTENANCE STEPS

Consumers regularly completes system health assessments for all their mechanical and electrical equipment, much of which is still original equipment. The facilities were designed as peaking units but are now operated as run of river facilities. As a result, the existing equipment is inefficient much of the year based on available river flows compared to runner efficiency curves. Consumers recognizes there is opportunity to improve the generation units and increase the efficiencies and resulting revenues. If the decision is not to upgrade the units but to repair the units with similar, in-kind equipment, the life of the unit could be similarly extended another 20-30 years. Part of evaluating the generation equipment and developing a plan of action would fall under an Enhancement, Operation and Maintenance strategy. This strategy and process requires internal and external resources to execute the upgrades or repairs and ensure the regulatory process is followed. Overall, the process breaks down into eight (8) main phases:

1. Diagnosis as a prerequisite to the strategy
2. Definition of the objectives of the strategy
3. Define actions for building the strategy
4. Evaluate strategic models for executing the strategy
5. Evaluate the organizational structure and close the gaps
6. Financial costs estimate of the O&M strategy
7. Perform a cost-benefit analysis to validate strategy
8. Implementation of the strategy and control

5.1.4 ISSUES/RISKS

Future license conditions are consistently more financially burdensome than current license conditions and environmental and dam safety regulations have become more rigorous over time which is expected to continue under a future license. Important issues and additional risks to accommodate in future licenses could include:

- Dam Safety Regulations such as:
  - Enhanced regulations, new design requirements (to RIDM)
  - Ongoing aging of the facilities (maintaining safe operating conditions)
  - Regular dam safety inspections, monitoring, and repairs
  - Requirements to monitor and report on operations
- Environmental Protection, Mitigation, and Enhancement Measures such as:
  - Requirements to add fish passage, restrict invasive species, or stock fish
  - Requirement to improve water quality (temperature and dissolved oxygen)
  - Requirements to enhance and/or expand recreation resources
  - Requirements to enhance wildlife/aquatic/wetland habitats
  - Requirements to minimize shoreline erosion
  - Limitations on peaking/formalization to run-of-river operations, seasonal scheduled outages to allow downstream passage of juvenile fish
  - Requirements for regular monitoring, reporting and consultation on environmental, recreation and potential removal plans throughout the course of the subsequent license.

5.1.5 NOTES

- Settlement agreements are negotiated agreements between the licensee and agencies on operational, protection, enhancement, or mitigation measures to include in a future license.
- Settlement agreements are typically not utilized to de-risk dam safety requirements.

5.2 SURRENDER

The three surrender scenarios would follow a similar process as relicensing as far as the execution of a work plan because the process is similar in it requires FERC approval. The following list summarizes the steps while the following subsections detail the process.

- Define internal strategy, overall plan, surrender process, and schedule.
- Prepare plan for surrender processes (e.g., resource studies, operational and dam safety proposals) and proposal for future restoration/conditions.
- Prepare stakeholder list and proposed outcomes at the projects to capture in the surrender (e.g., non-generation, partial removal, full removal with restoration).

- Conduct early outreach to stakeholders for existing data to include in the Initial Consultation Document.
- Prepare Initial Consultation Document and Notice of Intent, and file with FERC.
- Complete Study Planning and Execution, Field Data Collection, Reporting and Development of preliminary Protection, and Mitigation and Enhancement (PMEs) measures for surrender applications.
- Complete discussions and strategy around PMEs and evaluate pursuing settlement agreement(s).
- Finalize Surrender Applications.
- Implement surrender conditions and overall compliance.

5.2.1 PRELIMINARY SITE INVESTIGATIONS

- One of the unknowns in the surrender scenario is the potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures. While some sites (Mio and Calkins Bridge) are suspected to have a high probability to contain contaminated sediments upstream from the reservoirs, there is not have enough information related to sediment contamination within the reservoirs to drive the decisions at this time. Sediment investigations would occur after a decision to surrender and decommission were approved.

5.2.2 INTERNAL STRATEGY, OVERALL SURRENDER PLAN, PROCESS, AND SCHEDULE

An initial surrender plan, including identification of the preferred scenario for surrender, would be identified by Consumers with a general scope and schedule generated. This information would guide Consumers in the execution of the evaluations and process required for the license surrender and can be used to notify FERC of Consumers' intent to surrender the license. This early notification would begin the multi-year evaluation process of the surrender scenario for execution. It is anticipated that the overall surrender process, regardless of the selected surrender scenario, would take 8-10 years to execute to allow the environmental studies and stakeholder outreach to be conducted, preparation of engineering evaluations and development of bid documents, permitting, and moving through the overall FERC decommissioning process. Schedule is discussed in more detail in section 10, *Timeline.*

5.2.3 PREPARE STAKEHOLDER LIST, INITIATE CONSULTATION AND COMMUNICATE PLANS, FILE NOTICE OF INTENT WITH FERC

Prepare formal stakeholder list required for execution of the surrender, which would include federal, state, and local representatives for regulatory, environmental, and socioeconomic evaluations. With Consumers overall surrender plan and schedule, submit notifications to agencies and stakeholders of the intent to surrender and commence with stakeholder meetings for issues and concerns that would feed into detailed site assessments as part of the overall FERC surrender process. Consultation process provides stakeholders opportunity to provide input or even influence removal conditions or requirements. Results from the consultation and study process would inform the development of a final license surrender application.

5.2.4 CONDUCT ENVIRONMENTAL SITE INVESTIGATIONS AND STUDIES

In coordination with FERC, engineering and environmental assessment evaluations would be carried out in order to proceed with the decommissioning process. Studies would be variable based on the scenario and site; however, it is anticipated fisheries (ecology and biology of upstream and downstream reaches) and hydrologic/hydraulic assessments would be required for each surrender scenario. Additional evaluations for the partial and full removal scenarios should include evaluations for soils and sediments (physical and chemical) to understand management and disposal options, cultural investigations[2] (which may require Phase I, Phase II and Phase III assessments), vegetation condition assessments (including wetland delineation and non-native vegetation assessment surveys), and stream assessments to aid in the design of the restored channel footprints and adjacent floodplains.

5.2.5 EVALUATE ALTERNATIVES AND PREPARE PRELIMINARY DECOMMISSIONING PLANS AND CONDUCT DETAILED STAKEHOLDER CONSULTATION

Following site evaluations, evaluate decommissioning alternatives for the Environmental Impact Statement (EIS) and prepare preliminary decommissioning designs/plans for permits and consultation with stakeholders. Initiate stakeholder consultation to review preliminary decommissioning plans to present findings and plan of action forward. Obtain input ahead of permit application submissions to guide FERC findings in the EIS and address major hurdles in the approach prior to permit applications and formal public review processes.

5.2.6 PREPARE FINAL SURRENDER APPLICATION TO FERC

Upon filing the final application to FERC, FERC would determine if Environmental Assessment (EA) or an EIS are needed to assess the potential impacts of surrender and decommissioning on power needs, environmental resources, cultural and historic resources, land use, recreational resources, and socioeconomic resources in the vicinity of the project. Due to the size of these facilities and potential impacts, it is anticipated an EIS would be required for both the partial and full removal scenarios where an EA may be suitable for the no-power generation scenario. Once FERC satisfies their NEPA requirements they would issue a Surrender Order detailing the conditions required by FERC that must be accomplished to surrender the license.

[2] Archaeological and cultural surveys are the most common form of compliance with Section 106 of the National Historic Preservation Act. Phase I surveys involve the identification and assessment of both archaeological resources and historic structures. Phase II is further investigation and includes testing and evaluations. Phase III efforts are the most intense level of archaeological investigation in includes data recovery and site mitigation.

5.2.7 FINALIZE PLAN OF ACTION AND APPLY FOR APPLICABLE LOCAL, STATE, AND FEDERAL REGULATORY PERMITS FOR EXECUTION

Following detailed stakeholder coordination on the decommissioning plans and receiving comments, address comments with the decommissioning approach and complete formal design/documents required for execution and regulatory approvals. Document comments and response plans and include with applicable permit applications as well as providing to FERC consistent with decommissioning orders.

5.2.8 IMPLEMENT PLANS AND FERC DECOMMISSIONING ORDERS

With receipt of regulatory approvals and following environmental assessments/stakeholder documentation, FERC decommissioning orders should be obtained, and plans executed.

5.3 DIVEST

Following internal approvals to pursue putting the assets up for sale, an engineering firm familiar with owners' representation and due diligence would be hired to assist in preparing the materials interested buyers would review as part of the transaction. Materials would include generation records, inspection reports, safety information, condition assessments, and financial records.

6 SITE SUMMARIES

WSP compiled baseline information related to existing license conditions, forecast license conditions, existing dam safety and long-term financial plan activities as well as economic modeling results into a complete package for each site. The full site summary for each site is included in Appendix B.

7 ECONOMIC MODEL

7.1 INTRODUCTION

In order to assess the options concerning each of its 13 dams, a financial model was assembled to quantify the financial outcomes from the relicense and surrender scenarios. A Divest scenario (sale of the asset) has not been analyzed at this stage; for a future stage an asset valuation could be developed to consider the Divest scenario. This financial model captures the capital expenditures (CapEx), operational expenditures (OpEx or O&M), and potential revenues, and converts reasonable cost, revenue, and time assumptions into cashflow over a 50-year life cycle and pulls it to a present-day Net Present Value (NPV). This model was developed to analyze the financial value to Consumers of relicensing or surrendering the license as a viable investment. The WSP technical and economic model team worked together to arrive at reasonable assumptions, which are noted below. In addition to using the estimated cost and revenue figures a sensitivity analysis was run for every scenario. It is worth noting here that given the high capital costs and little revenue, in all cases the result is a negative NPV for the 13 dam sites for all the scenarios.

The NPV varies significantly depending on the scenario. As part of the sensitivity, the cost and revenues were manipulated to the point where a NPV of zero could be achieved. A NPV of zero means that a break-even point has been achieved for a dam based on the discounted cash flow of cost and revenues. Under this condition, and for a given scenario and dam one can evaluate at what rate the expected produced energy would have to be sold/raised to break-even. This type of sensitivity analysis provides context for understanding the long-term economic impact of the proposed alternatives.

Given the high variability inherent on the cost and expected revenue inputs, any conclusions formed with the use of the model shall be considered preliminary, and subject to a more detailed cost and lifecycle analysis. Furthermore, due consideration must be placed on qualitative aspects of risks, economics, and benefits which are outside of the scope of these economic models.

Consumers Energy used the models produced by WSP to add additional details such as overheads, updated escalation and discount rates (which matched those used by Consumers Energy), added in energy capacity value, updated revenue rates to reflect assumptions used in their IRP for years beyond 2050, and added a general capital line for anticipated, yet undefined capital costs at each site based on more recent trends in capital project spend at Consumers Energy hydropower sites. The intent of this exercise was to see how the model results changed when incorporating overheads and revenue for capacity, while also adding in some of the other known unknowns regarding overall hydro expenses.

7.2 GENERAL MODEL ASSUMPTIONS

The economic model of each site was built in a MS Excel file, where relevant project cost assumptions are input and converted into a cashflow of costs and revenues. The spreadsheets of the model are structured in a logical way by singling out inputs, escalation, timing, expenses, revenues and NPV (the model outcome). WSP employed a combination of approaches to populating and running the model.

Model inputs were derived from Consumers historical and near-term projections identified in the strategic plan and verified by literature review. Initially, Consumers 10-year Strategy Projection was reviewed for projected operations and maintenance as well as large Capital projects. The Strategy Projection was evaluated, and project costs distributed to the corresponding dam's economic model, feeding both the short-term capital investments (named “Maintain and Repair projects” in the economic model), as well as major project expenses such as spillway replacement or other major initiatives (named “Project Major Maintenance/Rehabilitation Expenses” in the economic model), and finally an acknowledgement that ongoing OpEx costs would be required during the future term of the license (calculated as a percentage of the Strategic Projections and applied to future years). Prior to using the information, the WSP team conducted an independent review of hydropower literature from federal sources to confirm Consumers estimated spend was accurate enough for inclusion in the model regarding the major costs or investments. The model was constructed with assumptions on costs for projects beyond 10 years to account for the age of the assets and need to maintain them for operation under a future license. Current Strategy Projection projects across the entire hydropower portfolio are a good representation of the types of maintenance projects the assets will require, such as dam safety inspections, concrete repairs, generator rewinds, etc. This basket of projects and associated costs are the types of projects that would occur during the future license, so our team assumed related expenses every ten years after relicense, with an additional expense half-way through the term, this is, at years 10, 20, 25 (half way), 30, 40 and 50. Although this approach didn’t identify specific projects because those are unknown at this time, it recognizes there would be projects and assigns costs for future Capital Projects. Future iterations could include a suite of defined projects or refined costs to improve on the comparative outputs. In the end all dams exhibited a negative NPV. Exploring additional CapEx project spends or adding additional projects or higher project costs generate larger negative NPV. Appendix A discusses WSP’s independent review of costs. In addition, for the surrender and decommission scenarios, WSP built cost estimates from our experience with dam removals and anticipated issues at each project site. All Strategy Projection costs and decommissioning costs used in the model do not include any Consumers Energy Overheads for construction management or reviews to be consistent with industry estimates.

7.2.1 TIMING ASSUMPTIONS

The current license is assumed to expire in 2034 for all the dams except for Calkins (license expires in 2040) and Webber (license expires in 2041). The current generation would continue until that year (inclusive). The relicense scenarios that assume upgrades or overhauls considers these to be performed immediately upon license issuance, followed by 50 years of operations under the new license. The studies and engineering required to relicense with upgrades and overhauls would be performed in the eight years prior to license expiration. On the other hand, decommissioning would occur after the expiration of the current license (technically with FERC’s approval to surrender), the duration of such decommissioning varies from 1 to 5 years depending on the scale of the decommissioning of each scenario. Studies and engineering required to surrender the license and decommission would be performed in the eight years prior to license expiration with FERC approval assumed in 2034 (2041 for Webber and 2042 for Calkins). All relicensing modeling assumed a similar evaluation process at the end of the next license period, therefore decommissioning costs were not included in any of the relicensing models.

7.2.1 RELICENSING COST ASSUMPTIONS

For relicensing scenarios, Capital Expenditures (CapEx) costs are associated with two types of spend: (1) upgrading the units; or (2) overhaul the units. CapEx costs that upgrade or overhaul units increase generation and resulting revenues. Table 4 presents the Capital Cost of turbine upgrades or overhaul associated with the relicensing options. Appendix A-1, WSP Review of Turbine Upgrade and Overhaul Costs details the input items for these two scenarios. These turbine capital costs are added to the Strategy Projection costs for major civil works such as Spillway repairs. WSP reviewed and utilized Consumers' project cost estimates from their current Strategy Projection (10-year projection) and included those projects that needed to be executed either for relicense or non-generation decommission (e.g., Spillway projects). Operational and maintenance (O&M) costs would also be incurred throughout a future license term and these costs were considered across the life cycle.

For relicensing scenarios, licensing costs begin before the current license expires and if the scenario has turbine upgrades or repairs those costs are incurred in the first couple of years before and after the subsequent license is issued to account for procurement, design services and installation. Future O&M and CapEx spend will be required to continue to operate and maintain the assets, so WSP developed assumptions on the spend for these activities and budgeted them into the model to occur in years 20, 25 (halfway of license anticipated major maintenance like generator rewinds, turbine repairs), 30, 40 and 50. Because the costs of these types of activities is known from planned spend for the first 10 years, a percentage of the overall spend was applied each year in future license years with a doubling of the percentage half way and a smaller percentage in year 50 to either relicense or surrender the license at that time.

Table 4. Turbine upgrade Costs for upgrade and Overhaul relicense options

	Rogers		Hardy	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	**2.6 MW Kaplan Turbine Units 1-4**	**Overhaul Units 1-4 Francis Runners**	**Upgrade Units to Kaplan units**	**Overhaul Existing Units with Similar Equipment**
Estimated Cost	$16,789,000	$17,514,000	$26,481,000	$23,833,000
Overhead (35%)	$5,876,000	$6,130,000	$9,267,000	$8,342,000
Total Cost	$22,665,000	$23,644,000	$35,748,000	$32,175,000
Average Annual MWh w/ Current Units	22,755	22,755	107,495	107,495
Anticipated Annual MWh for each option	43,524	26,871	145,118	118,245
Estimated Annual Gain MWh	20,769	4,116	37,623	10,750

	Croton	
	Upgrade	Overhaul

Option Description	Upgrade Units 1-4 to Kaplans and Add One Kaplan in the Dead Bay	Overhaul Units 1, 2, 3 & 4
Estimated Cost	$34,475,000	$24,859,000
Overhead (35%)	$12,066,000	$8,701,000
Total Cost	$46,541,000	$33,560,000
Average Annual MWh w/ Current Units	34,737	34,737
Anticipated Annual MWh for each option	78,617	38,211
Estimated Annual Gain MWh	43,880	3,474

	Hodenpyl		Tippy	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	Upgrade One Unit, Keep One Unit Smaller Francis	Overhaul Units 1 & 2	Upgrade Units 1, 2 & 3 to Kaplans	Overhaul Units 1, 2 & 3
Estimated Cost	$22,053,000	$21,233,000	$31,949,000	$29,806,000
Overhead (35%)	$7,718,000	$7,432,000	$11,182,000	$10,432,000
Total Cost	$29,771,000	$28,665,000	$43,131,000	$40,238,000
Average Annual MWh w/ Current Units	48,522	48,522	62,108	62,108
Anticipated Annual MWh for each option	103,343	52,236	119,059	68,746
Estimated Annual Gain MWh	54,821	3,714	56,951	6,638

	Mio		Alcona	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	3.5 MW Kaplan Turbine Units 1 & 2	Overhaul Units 1 & 2	7 MW Kaplan Turbine Units 1 & 2	Overhaul Units 1 & 2
Estimated Cost	$13,627,000	$15,244,000	$17,890,000	$18,332,000
Overhead (35%)	$4,769,000	$5,335,000	$6,262,000	$6,416,000
Total Cost	$18,396,000	$20,579,000	$24,152,000	$24,748,000
Average Annual MWh w/ Current Units	15,423	15,423	29,025	29,025
Anticipated Annual MWh for each option	22,690	16,966	56,599	52,506
Estimated Annual Gain MWh	7,267	1,543	27,573	23,481

	Loud		Five Channels	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	**Upgrade to Seagull Units 1 & 2**	**1.3 MW Turbine Units 1 & 2**	**Upgrade to Seagull Units 1 & 2**	**2 MW Turbine Unit 1, Overhaul Unit 2**
Estimated Cost	$20,880,000	$13,980,000	$21,012,000	$18,002,000
Overhead (35%)	$7,308,000	$4,893,000	$7,354,000	$6,301,000
Total Cost	$28,188,000	$18,873,000	$28,366,000	$24,303,000
Average Annual MWh w/ Current Units	18,689	18,689	25,032	25,032
Anticipated Annual MWh for each option	23,588	22,736	32,728	30,290
Estimated Annual Gain MWh	4,899	4,047	7,696	5,258

	Cooke		Foote	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	**2 MW Turbine Units 1, 2 & 3**	**Overhaul Seagull Units 1 & 2**	**5.9 MW Kaplan Turbine Unit 1, 5.0 MW Kaplan Units 2 & 3**	**Upgrade Unit 1 & 2 Generator, Smaller Francis Unit 3**
Estimated Cost	$24,201,000	$18,577,000	$22,354,000	$25,324,000
Overhead (35%)	$8,470,000	$6,502,000	$7,824,000	$8,863,000
Total Cost	$32,671,000	$25,079,000	$30,178,000	$34,187,000
Average Annual MWh w/ Current Units	27,803	27,803	30,711	30,711
Anticipated Annual MWh for each option	38,881	35,977	61,642	38,672
Estimated Annual Gain MWh	11,078	8,174	30,931	7,961

	Allegan		Webber	
	Upgrade	Overhaul	Upgrade	Overhaul
Option Description	**Upgrade Unit 1 to Kaplan, Overhaul Units 2 & 3**	**Overhaul Units 1, 2 & 3**	**Upgrade Units to Kaplan units**	**Overhaul Existing Units with Similar Equipment**
Estimated Cost	$9,700,000	$8,573,000	$7,428,000	$6,685,000
Overhead (35%)	$3,395,000	$3,000,000	$2,600,000	$2,340,000
Total Cost	$13,095,000	$11,573,000	$10,028,000	$9,025,000
Average Annual MWh w/ Current Units	13,628	13,628	11,271	11,271
Anticipated Annual MWh for each option	15,047	13,628	37,668	18,900

Estimated Annual Gain MWh	1,418	-	26,397	7,629

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7.2.2 SURRENDER COST ASSUMPTIONS

As previously described, WSP performed an independent analysis of the costs for the three defined surrender license scenarios. Preparation of the surrender applications and associated costs would be incurred before the current license expires. The surrender scenario of maintaining any reservoir behind a dam assumes the dam would meet state standards and costs to achieve this measure of safety are included in the first few years of the accepted surrender (e.g., spillway project). Spend associated with surrendering and decommissioning the sites are as follows:

1. Surrender 1 - No-Power Generation Operation: The existing water-dams would remain intact. The electric generating units and auxiliary equipment would be disabled to prevent generation of electricity. The dam and spillway would be modified to meet state dam safety requirements and maintain the reservoir. OpEx costs would be incurred to maintain the dam and spillway structure (e.g., dam safety standards, mowing, inspections).
2. Surrender 2 - Partial Removal: Demolition and removal of specific elements of the dam to lower the impoundment and re-establish the river channel through the project site. Only the embankment dam sections outside of the floodplain would be left intact. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated. OpEx costs would be incurred to maintain the remaining structures (e.g., six-foot weir, mowing, inspections).
3. Surrender 3 - Complete Removal: Demolition and removal of all the dam and powerhouse structures and reestablishment of the river channel through the former dam site. Includes full removal of the earth dam sections, concrete spillway, powerhouse, tailrace and retaining walls, and all appurtenant structures. During controlled drawdown, hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly. No additional CapEx or OpEx costs would be incurred after the restoration is complete.

For the non-power operation and partial removal (both Surrender scenarios) a minimal O&M cost has been included to address maintenance responsibilities on the remaining portions of the dams (e.g., mowing, safety checks, monitoring). Operations and maintenance costs would not exist under the full decommission surrender scenario. Details of the assumed costs for surrender options are provided by site and by scenario in Appendix A-2, WSP Surrender and Decommission Costs.

7.2.3 REVENUE ASSUMPTIONS

Revenue is the financial benefit of generating electricity at the sites. Because Consumers is a regulated utility, revenues to the company are developed through the Michigan Public Service Commission planning process and include forecast costs and revenues from the entire portfolio of generation assets. As such, revenue estimates were provided by Consumers through 2049 that are assumed to include what the forecast costs and revenues from the future portfolio yields. Revenue rates in 2023 are $60.7/MWh and forecast to decrease over time to a value of $30.3/MWh in the year 2049 (see Figure 2). To estimate revenues for years Consumers did not provide estimates for, an average rate over the years 2045 to

2049 was used for the projection of the subsequent years in the analysis. Lastly, we assumed Consumers would be awarded a Department of Energy, Hydropower Grant of $2.5 million per site (spread evenly between 2025-2027) to help offset the costs of upgrades and dam safety projects. This figure represents half the maximum amount each site could be awarded as a conservative estimate that some sites may be awarded the full $5 million, and some sites won't be awarded anything. These grant revenues are assigned to each site under the relicense scenarios. Surrender and decommission scenarios would not generate revenue after the FERC Order approving license surrender; the timing of which is accounted for under Section *9.2.1 Timing Assumptions*. Consumers Energy reran the models with additional information on revenues related to capacity charges.

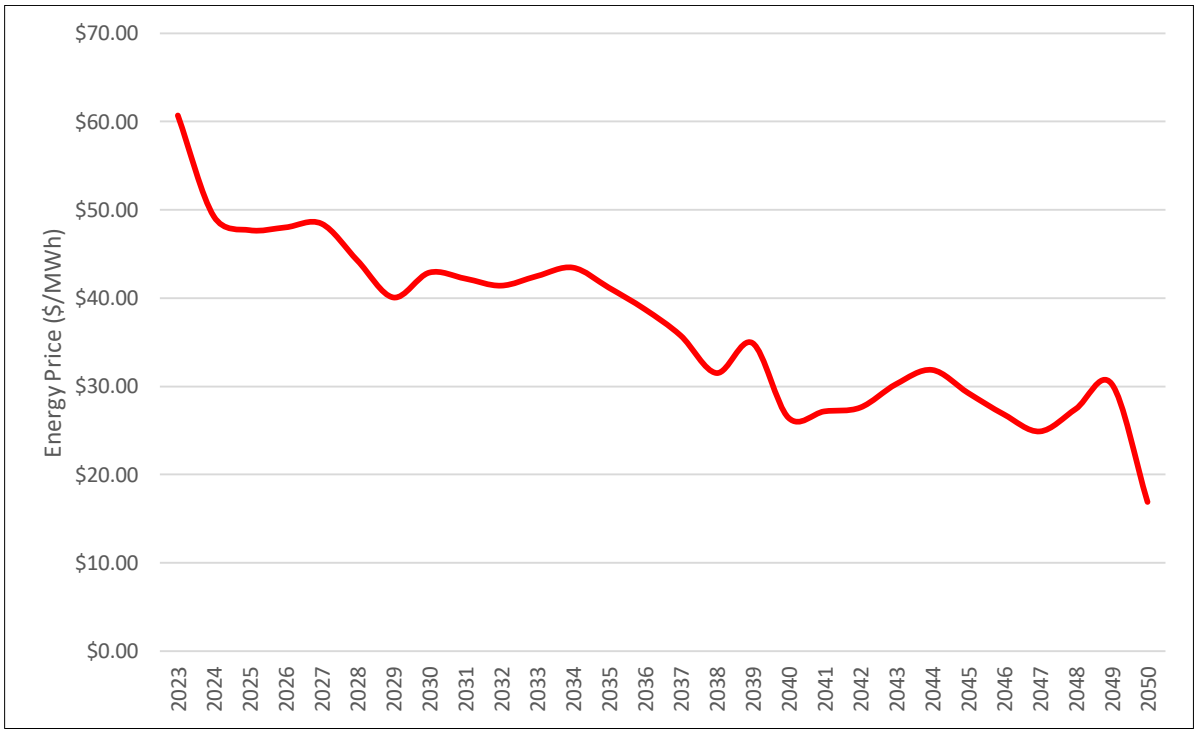


Figure 2. Energy Rate Forecast per MWh for the Consumers Hydro Portfolio

7.2.4 ESCALATION AND DISCOUNT RATES

CapEx and OpEx figures are expressed in 2022 base year dollars. CapEx figures have been escalated at 7% for values in 2023 to account for recent high inflation and at 4% more consistent with standard values for values in years 2024 to 2084. OpEx values are escalated at a slightly lower rate, 6% for values in 2023 because they include more labor than materials but still accounts for high inflation, and at 3% for values in years 2024 to 2084. The discount rate for NPV calculation is assumed as 7.5%; a generally accepted rate for similarly high-level financial planning as was modeled here. Consumers Energy reran the models with a slightly smaller escalation rate of 2% every year and added 40% to the CapEx costs to account for Consumer Energy overhead.

7.2.5 SENSITIVITY

To understand how sensitive the model was to CapEx or revenues, a simple sensitivity analysis of each model run was performed adjusting these two inputs. The sensitivity analysis responded to the question *"What would be an energy rate that would make the investments break even?"* The sensitivity analysis generated 390 possible energy rates and the sensitivity was limited to the relicensing scenarios only. The two adjustments related to revenue (energy rate) were: (1) energy rate would be fixed throughout the period of analysis starting in 2023, or (2) that it would increase annually at 1 percent, 2 percent, 3 percent, or 4 percent. A separate sensitivity in the model was developed to investigate how rates would respond if the CapEx spend was 50 percent the base estimate. Figure 3 shows the sensitivity model runs for the upgrade and maintain/ repair scenarios.

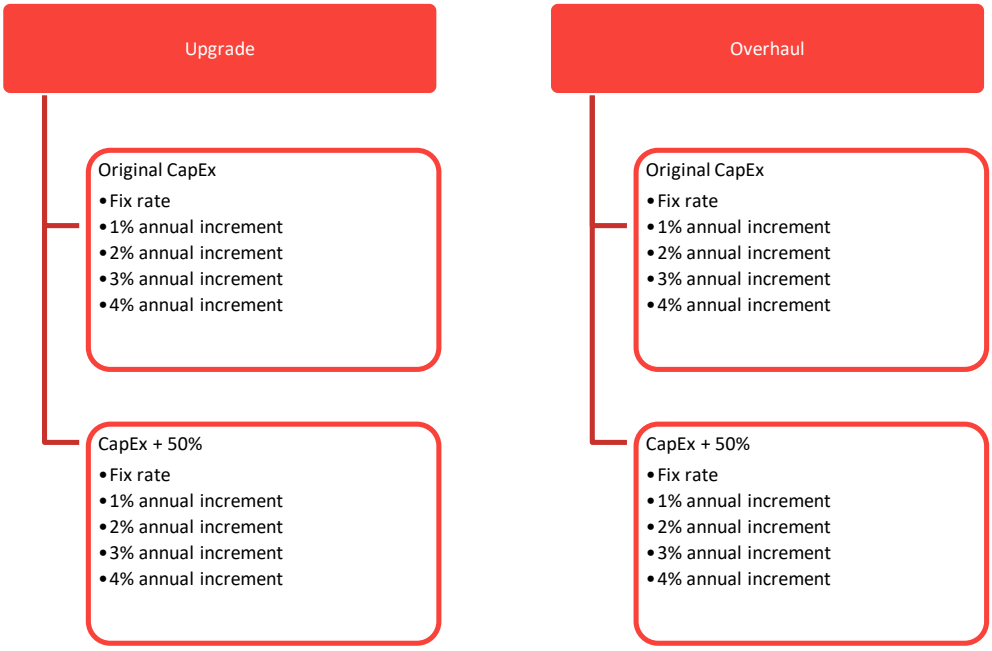


Figure 3. Sensitivity Model Runs

8 RESULTS AND INTERPRETATION

8.1 BASE CASES

The result of the financial model is a comparative cashflow of estimated costs and revenues, and a Net Present Value (NPV) or Net Present Cost, of such cashflow over the analysis period. Negative NPV means there is no value creation with the investments and positive NPV means these investments result in a positive return during the analyzed 50-year term. Table 5 summarizes the NPV of each scenario for each site.

Table 5a. WSP Model NPV of Five Scenarios for each of the Dams

Rogers	NPV (Millions of $)	Hardy	NPV (Millions of $)
Relicense - Upgrade Units	-$ 141	Relicense - Upgrade Units	-$ 310
Relicense - Overhaul	-$ 145	Relicense - Overhaul	-$ 304
Surrender - No-Power Generation	-$ 113	Surrender - No-Power Generation	-$ 264
Surrender - Partial Decommission	-$ 62	Surrender - Partial Decommission	-$ 186
Surrender - Full Decommission	-$ 65	Surrender - Full Decommission	-$ 196
Croton	**NPV (Millions of $)**	**Hodenpyl**	**NPV (Millions of $)**
Relicense - Upgrade Units	-$ 67	Relicense - Upgrade Units	-$ 83
Relicense - Overhaul	-$ 60	Relicense - Overhaul	-$ 84
Surrender - No-Power Generation	-$ 18	Surrender - No-Power Generation	-$ 58
Surrender - Partial Decommission	-$ 110	Surrender - Partial Decommission	-$ 104
Surrender - Full Decommission	-$ 117	Surrender - Full Decommission	-$ 139
Tippy	**NPV (Millions of $)**	**Mio**	**NPV (Millions of $)**
Relicense - Upgrade Units	-$ 115	Relicense - Upgrade Units	-$ 39
Relicense - Overhaul	-$ 120	Relicense - Overhaul	-$ 42
Surrender - No-Power Generation	-$ 6	Surrender - No-Power Generation	-$ 12
Surrender - Partial Decommission	-$ 65	Surrender - Partial Decommission	-$ 59
Surrender - Full Decommission	-$ 66	Surrender - Full Decommission	-$ 64
Alcona	**NPV (Millions of $)**	**Loud**	**NPV (Millions of $)**
Relicense - Upgrade Units	-$ 75	Relicense - Upgrade Units	-$ 65
Relicense - Overhaul	-$ 75	Relicense - Overhaul	-$ 55
Surrender - No-Power Generation	-$ 51	Surrender - No-Power Generation	-$ 23
Surrender - Partial Decommission	-$ 61	Surrender - Partial Decommission	-$ 51
Surrender - Full Decommission	-$ 65	Surrender - Full Decommission	-$ 50

Five Channels	NPV (Millions of $)	Cooke	NPV (Millions of $)
Relicense - Upgrade Units	-$ 53	Relicense - Upgrade Units	-$ 57
Relicense - Overhaul	-$ 49	Relicense - Overhaul	-$ 55
Surrender - No-Power Generation	-$ 19	Surrender - No-Power Generation	-$ 21
Surrender - Partial Decommission	-$ 44	Surrender - Partial Decommission	-$ 85
Surrender - Full Decommission	-$ 40	Surrender - Full Decommission	-$ 87
Foote	**NPV (Millions of $)**	**Calkins Bridge**	**NPV (Millions of $)**
Relicense - Upgrade Units	-$ 88	Relicense - Upgrade Units	-$ 37
Relicense - Overhaul	-$ 94	Relicense - Overhaul	-$ 35
Surrender - No-Power Generation	-$ 22	Surrender - No-Power Generation	-$ 17
Surrender - Partial Decommission	-$ 100	Surrender - Partial Decommission	-$ 109
Surrender - Full Decommission	-$ 100	Surrender - Full Decommission	-$ 127
Webber	**NPV (Millions of $)**		
Relicense - Upgrade Units	-$ 43		
Relicense - Overhaul	-$ 41		
Surrender - No-Power Generation	-$ 17		
Surrender - Partial Decommission	-$ 46		
Surrender - Full Decommission	-$ 48		

Table 6b. Consumers Energy Model NPV of Five Scenarios for each of the Dams

Rogers	NPV (Millions of $)	Hardy	NPV (Millions of $)
Relicense - Upgrade Units	(205.7)	Relicense - Upgrade Units	(451.0)
Relicense - Overhaul	(209.2)	Relicense - Overhaul	(446.1)
Surrender - No-Power Generation	(164.3)	Surrender - No-Power Generation	(391.4)
Surrender - Partial Decommission	(77.3)	Surrender - Partial Decommission	(214.4)
Surrender - Full Decommission	(75.7)	Surrender - Full Decommission	(211.9)
Croton	**NPV (Millions of $)**	**Hodenpyl**	**NPV (Millions of $)**
Relicense - Upgrade Units	(97.66)	Relicense - Upgrade Units	(132.4)
Relicense - Overhaul	(90.96)	Relicense - Overhaul	(132.4)
Surrender - No-Power Generation	(33.55)	Surrender - No-Power Generation	(93.4)
Surrender - Partial Decommission	(130.46)	Surrender - Partial Decommission	(124.3)
Surrender - Full Decommission	(134.28)	Surrender - Full Decommission	(157.6)

Tippy	NPV (Millions of $)
Relicense - Upgrade Units	(157.5)
Relicense - Overhaul	(162.1)
Surrender - No-Power Generation	(19.8)
Surrender - Partial Decommission	(81.0)
Surrender - Full Decommission	(78.1)

Mio	NPV (Millions of $)
Relicense - Upgrade Units	(74.4)
Relicense - Overhaul	(77.2)
Surrender - No-Power Generation	(27.5)
Surrender - Partial Decommission	(75.8)
Surrender - Full Decommission	(76.2)

Alcona	NPV (Millions of $)
Relicense - Upgrade Units	(121.4)
Relicense - Overhaul	(120.8)
Surrender - No-Power Generation	(83.0)
Surrender - Partial Decommission	(81.2)
Surrender - Full Decommission	(80.0)

Loud	NPV (Millions of $)
Relicense - Upgrade Units	(98.9)
Relicense - Overhaul	(89.7)
Surrender - No-Power Generation	(40.4)
Surrender - Partial Decommission	(69.4)
Surrender - Full Decommission	(64.2)

Five Channels	NPV (Millions of $)
Relicense - Upgrade Units	(84.4)
Relicense - Overhaul	(79.8)
Surrender - No-Power Generation	(34.6)
Surrender - Partial Decommission	(60.9)
Surrender - Full Decommission	(52.5)

Cooke	NPV (Millions of $)
Relicense - Upgrade Units	(86.3)
Relicense - Overhaul	(84.5)
Surrender - No-Power Generation	(37.1)
Surrender - Partial Decommission	(102.8)
Surrender - Full Decommission	(100.7)

Foote	NPV (Millions of $)
Relicense - Upgrade Units	(125.7)
Relicense - Overhaul	(130.9)
Surrender - No-Power Generation	(39.6)
Surrender - Partial Decommission	(122.0)
Surrender - Full Decommission	(116.5)

Calkins Bridge	NPV (Millions of $)
Relicense - Upgrade Units	(66.5)
Relicense - Overhaul	(64.9)
Surrender - No-Power Generation	(31.6)
Surrender - Partial Decommission	(127.8)
Surrender - Full Decommission	(128.0)

Webber	NPV (Millions of $)
Relicense - Upgrade Units	(76.7)
Relicense - Overhaul	(75.0)
Surrender - No-Power Generation	(33.9)
Surrender - Partial Decommission	(60.2)
Surrender - Full Decommission	(56.1)

8.1.1 SENSITIVITY RESULTS

As explained above, the sensitivity analysis performed is a numerical exercise that serves the purpose of conveying the importance of certain model/analysis inputs on the outcome. In this case, it provides a comparison of the costs of proposed investments during a future license, even though the energy rate cannot be increased freely as such, and its price setting is far more complex and regulated. This analysis is done by considering an energy rate for 2023 that is either escalated or fixed during the 50 years a future license and studying what the revenue rate should be for a break-even scenario with the defined capital project costs and under incremented capital projects costs. The sensitivity analysis results are presented in the next subsections.

8.1.1.1 BREAK EVEN ANALYSIS UNDER CURRENT ENERGY RATE

According to the results of the sensitivity analysis, there is a single scenario that result in an energy rate that is under the current price of $60.7/MWh suggesting its possible for a site to be financially neutral or better if the energy rate does not decrease in the future and even if the Capital costs of Overhauling or Upgrading increase by 50%. Table 6 illustrate the project that could break even under the hypothesis of no decline on the revenue side and show the corresponding 2023 energy rate and subsequent years escalation factor.

Table 7. Positive NPV Scenarios

Type of investment	Site	Energy rate Escalation beyond 2023	2023 Rate for NPV = 0 ($/MWh)
Relicense 1 – Upgrade			
Relicense 1 - Upgrade	Hodenpyl	4%	$ 59

8.1.2 SENSITIVITY - CONSERVATIVE

8.1.2.1 CAPEX IS ACCURATE AND NO ESCALATION IN REVENUE

This sensitivity analysis considers no increase in CapEx and no escalation in revenue. The result shows that energy rates would have to be much higher than current rates for the NPV to break even. Table 7 and figure 4 show the rate at which the sites result in a NPV that breaks even. This analysis shows that, to generate the revenues to offset the CapEx spend, revenues (rates) must start much higher than current conditions. This is due to the amount of CapEx spend necessary to upgrade and maintain these assets relative to the amount of generation (and ultimately revenues) they have the capacity to produce.

Table 8. Fixed Energy Rates to Break Even

Type of investment	Site	Escalation	2023 Rate for NPV = 0 ($/MWh)
Relicense 1 - Upgrade			
Relicense 1 - Upgrade	Loud	0%	$ 262
Relicense 1 - Upgrade	Webber	0%	$ 227
Relicense 1 - Upgrade	Foote	0%	$ 184
Relicense 1 - Upgrade	Five Channels	0%	$ 175
Relicense 1 - Upgrade	Cooke	0%	$ 164
Relicense 1 - Upgrade	Hodenpyl	0%	$ 117
Relicense 1 - Upgrade	Croton	0%	$ 126
Relicense 1 - Upgrade	Tippy	0%	$ 134
Relicense 1 - Upgrade	Mio	0%	$ 190
Relicense 1 - Upgrade	Rogers	0%	$ 362
Relicense 1 - Upgrade	Alcona	0%	$ 171
Relicense 1 - Upgrade	Hardy	0%	$ 227
Relicense 1 - Upgrade	Calkins	0%	$ 227
Relicense 2 – Overhaul			
Relicense 2 - Overhaul	Loud	0%	$ 232
Relicense 2 - Overhaul	Webber	0%	$ 294
Relicense 2 - Overhaul	Foote	0%	$ 237
Relicense 2 - Overhaul	Five Channels	0%	$ 170
Relicense 2 - Overhaul	Cooke	0%	$ 165
Relicense 2 - Overhaul	Hodenpyl	0%	$ 152
Relicense 2 - Overhaul	Croton	0%	$ 148
Relicense 2 - Overhaul	Tippy	0%	$ 170
Relicense 2 - Overhaul	Mio	0%	$ 221
Relicense 2 - Overhaul	Rogers	0%	$ 457
Relicense 2 - Overhaul	Alcona	0%	$ 176
Relicense 2 - Overhaul	Hardy	0%	$ 229
Relicense 2 - Overhaul	Calkins	0%	$ 222

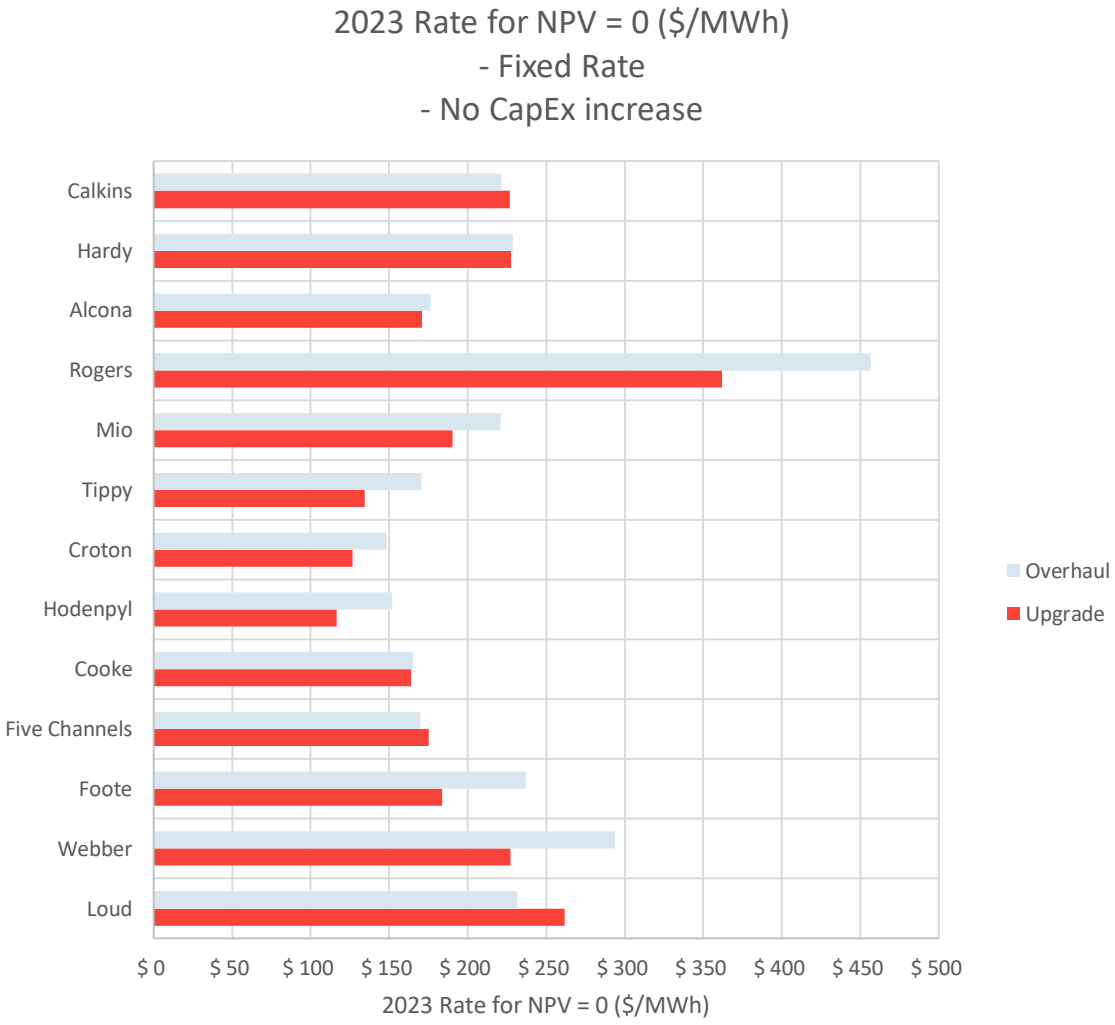


Figure 4. Break Even Rates for the Relicensing Scenarios without Escalation in the CapEx Spend or Rate of Revenue over Time

8.1.3 SENSITIVITY – MANIPULATED

8.1.4 CAPEX INCREASES BY 50% AND REVENUES PROJECT TO ESCALATE 4%

The sensitivity analysis for the scenarios with a 50 percent increase in CapEx and a 4 percent annual revenue escalation show more sites potentially breakeven (NPV would equal zero). Table 8 and figure 5 show the 2023 energy rates that could break even if revenues escalated.

Table 9. NPV for Four Percent Escalation and Turbine Upgrade or Overhaul Cost Increase by 50 Percent

Type of investment	Site	Escalation	2023 Rate for NPV = 0 ($/MWh)
Relicense 1 - Upgrade			
Relicense 1 - Upgrade	Loud	4%	$ 155
Relicense 1 - Upgrade	Webber	4%	$ 101
Relicense 1 - Upgrade	Foote	4%	$ 95
Relicense 1 - Upgrade	Five Channels	4%	$ 104
Relicense 1 - Upgrade	Cooke	4%	$ 94
Relicense 1 - Upgrade	Hodenpyl	4%	$ 59
Relicense 1 - Upgrade	Croton	4%	$ 70
Relicense 1 - Upgrade	Tippy	4%	$ 70
Relicense 1 - Upgrade	Mio	4%	$ 109
Relicense 1 - Upgrade	Rogers	4%	$ 178
Relicense 1 - Upgrade	Alcona	4%	$ 88
Relicense 1 - Upgrade	Hardy	4%	$ 123
Relicense 1 - Upgrade	Calkins	4%	$ 128
Relicense 2 - Overhaul			
Relicense 2 - Overhaul	Loud	4%	$ 133
Relicense 2 - Overhaul	Webber	4%	$ 167
Relicense 2 - Overhaul	Foote	4%	$ 136
Relicense 2 - Overhaul	Five Channels	4%	$ 101
Relicense 2 - Overhaul	Cooke	4%	$ 96
Relicense 2 - Overhaul	Hodenpyl	4%	$ 67
Relicense 2 - Overhaul	Croton	4%	$ 89
Relicense 2 - Overhaul	Tippy	4%	$ 99
Relicense 2 - Overhaul	Mio	4%	$ 136
Relicense 2 - Overhaul	Rogers	4%	$ 250
Relicense 2 - Overhaul	Alcona	4%	$ 92
Relicense 2 - Overhaul	Hardy	4%	$ 125
Relicense 2 - Overhaul	Calkins	4%	$ 127

Note: highlighted cells show the corresponding rate when NPV breaks even. This is a function of sites that have substantial generation to produce revenues relative to their estimated CapEx requirements.

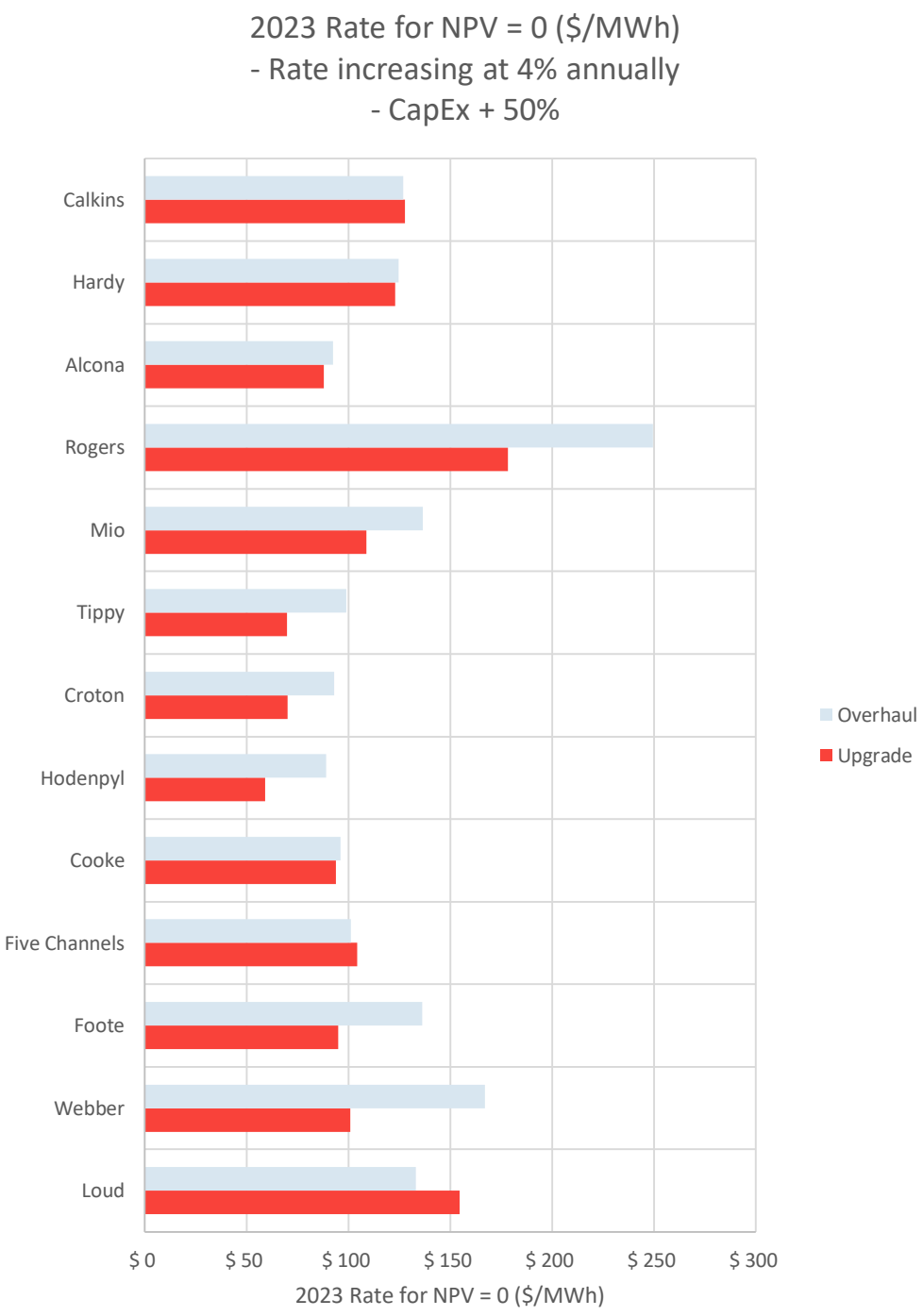


Figure 5. NPV for Four Percent Escalation and CapEx Increase by 50 Percent

8.1.4.1 *TURBINE UPGRADE AND OVERHAUL (CAPEX) INCREASES BY 50% AND REVENUES NOT ESCALATED REVENUE (0%)*

The sensitivity analysis for the scenarios with a 50 percent increase in CapEx but no annual escalation shows only two sites potentially breakeven (NPV would equal zero) as the revenue is one of the most sensitive parameters of the analysis. Table 9 and Figure 6 show the 2023 energy rates that could break even if revenues escalated.

Table 10. NPV for no Escalation and CapEx Increase by 50 Percent

Type of investment	Site	Escalation	2023 Rate for NPV = 0 ($/MWh)
Relicense 1 - Upgrade			
Relicense 1 - Upgrade	Loud	0%	$ 308
Relicense 1 - Upgrade	Webber	0%	$ 249
Relicense 1 - Upgrade	Foote	0%	$ 208
Relicense 1 - Upgrade	Five Channels	0%	$ 209
Relicense 1 - Upgrade	Cooke	0%	$ 191
Relicense 1 - Upgrade	Hodenpyl	0%	$ 131
Relicense 1 - Upgrade	Croton	0%	$ 157
Relicense 1 - Upgrade	Tippy	0%	$ 151
Relicense 1 - Upgrade	Mio	0%	$ 224
Relicense 1 - Upgrade	Rogers	0%	$ 387
Relicense 1 - Upgrade	Alcona	0%	$ 192
Relicense 1 - Upgrade	Hardy	0%	$ 237
Relicense 1 - Upgrade	Calkins	0%	$ 251
Relicense 2 - Overhaul			
Relicense 2 - Overhaul	Loud	0%	$ 263
Relicense 2 - Overhaul	Webber	0%	$ 321
Relicense 2 - Overhaul	Foote	0%	$ 271
Relicense 2 - Overhaul	Five Channels	0%	$ 200
Relicense 2 - Overhaul	Cooke	0%	$ 192
Relicense 2 - Overhaul	Hodenpyl	0%	$ 171
Relicense 2 - Overhaul	Croton	0%	$ 180
Relicense 2 - Overhaul	Tippy	0%	$ 191
Relicense 2 - Overhaul	Mio	0%	$ 264
Relicense 2 - Overhaul	Rogers	0%	$ 489
Relicense 2 - Overhaul	Alcona	0%	$ 198
Relicense 2 - Overhaul	Hardy	0%	$ 238
Relicense 2 - Overhaul	Calkins	0%	$ 244

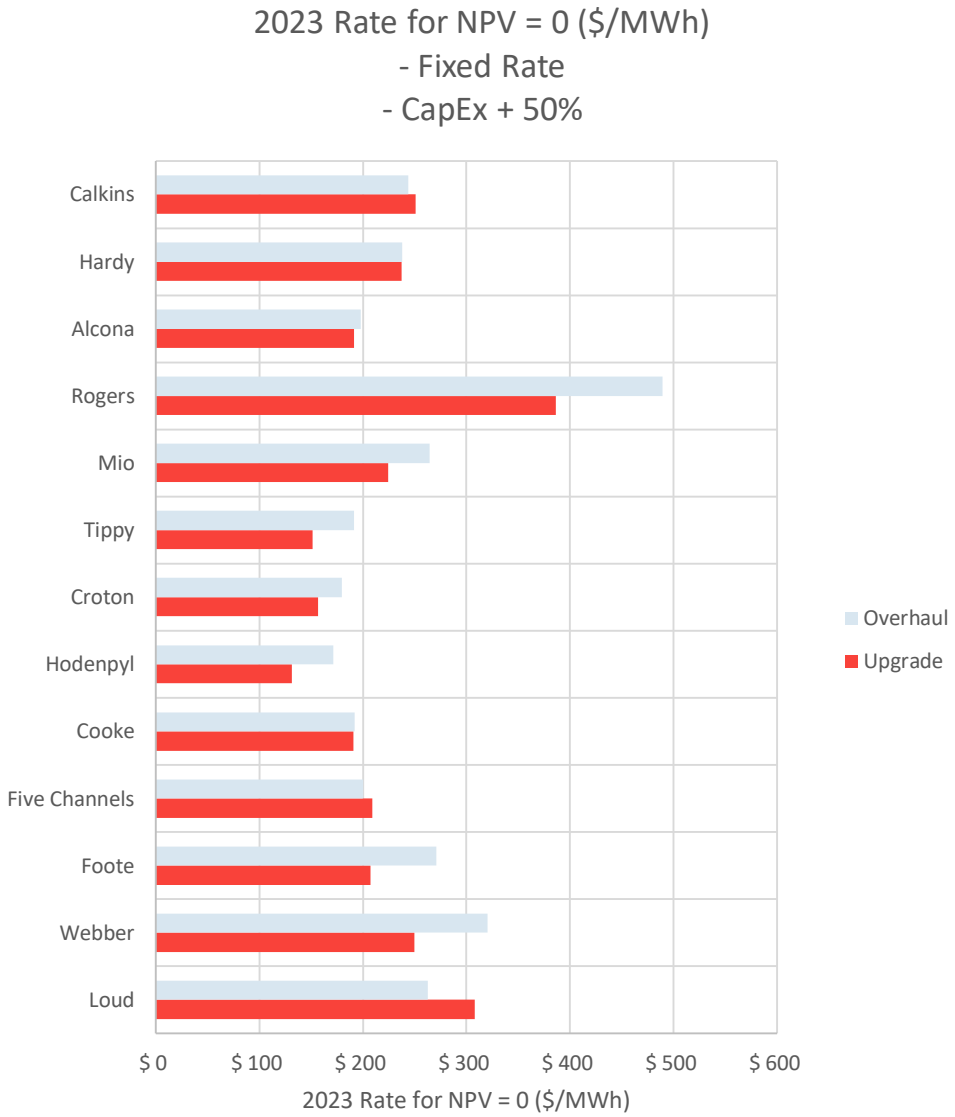


Figure 6. NPV for no Escalation and CapEx Increase by 50 Percent

9 RISK ANALYSIS

9.1 MUSKEGON RIVER SYSTEM

9.1.1 ROGERS RISK SUMMARY

Rogers limited generation capacity relative to the estimated costs to achieve dam safety compliance or upgrade or repair the units results in larger negative NPV for relicensing and surrender-non generation alternatives (scenarios where dam remains in place) compared to the surrender full and partial decommission alternatives. This is a function of the CapEx spend without sufficiently large enough capacity to generate revenues to offset those costs. Additionally, although Rogers does meet state water quality standards for temperature, the reservoir does contribute to warming as the reservoir provides thermal mass minimizing potential for cooling at night contributing warmer waters downstream where the temperatures downstream of Croton fail to meet the standards. Divesting Rogers may make the most sense if balancing costs with reputation to appease the private property owners. Table 10 summarizes the issues for Rogers that influence the opinion of best outcome to pursue as part of this roadmap and Table 11 summarizes the risks by risk category.

Table 11. Rogers Issue Matrix Summary

Attribute	Considerations
Environment	Although Rogers reservoirs and releases do meet state water quality standards for temperature, Rogers does contribute to warming temperatures downstream at Hardy and Croton (yellow) by preloading temperatures into the waters entering those Projects. Operational compliance concerns related to run-of-river reregulation between Rogers and Croton requires gauging and automation (yellow). Surrender removal eliminates thermal loading on the river system and opens upstream habitat for fish allowing more habitat for natural reproduction (green).
Dam Safety	Relicensing requires spillway upgrades which are currently out of compliance (red). Surrender with dam in place potentially lowers dam safety regulations that need to be met (from FERC to state standards). This (orange). Surrender removal and divest eliminates the risk (green).
Economics	NPV ranges from -$145M to -$62M with relicensing more expensive due to spillway capital projects (regulatory compliance). Surrender-partial decommission is the lowest NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefits (orange).

Attribute	Considerations
People	Relicensing with new equipment better for staff than maintaining and repairing (yellow). Full dam removal eliminates safety hazards to staff and public (green).
Reputational	400+ private parcels[3] around reservoir that could be directly impacted by Consumers decision; relicensing or surrender with dam in place would be status quo for these entities (green). Surrender – partial or full decommissioning would elicit public outcry but agency agreement (red).

Table 12. Rogers Risk Matrix

RISKS					
Rogers	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 141M		
Relicense - Overhaul (refurbish units in kind)			-$ 145M		
Surrender - No-Power Generation			-$ 113M		
Surrender - Partial Decommission			-$ 62M		
Surrender - Full Decommission			-$ 65M		
Divest					

9.1.2 HARDY SITE SUMMARY

Hardy has significant dam safety requirements associated with an aging and undersized spillway that need to be addressed within the current FERC license and is likely a significant contributor to driving the interest in this roadmap. Although Hardy is a popular reservoir for recreation there does not appear to be a realistic path forward that eliminates all the risk associated with operating the Hardy Dam in the future without addressing the issues related to the spillway. Given the high number of recreation resources around Hardy, the partial and full decommission alternatives would generate the most risk to Consumers reputation with the community. However, as great as the cost of decommissioning the dam and the risk to Consumers reputation is, the NPV of -$196M is better than rebuilding the spillway and leaving the dam in place with NPV of -$264M. It is our opinion that the best path forward to reduce future risks to Consumers

[3] All references to parcels associated with projects are preliminary and for more accurate information one should reference the Consumer contribution studies.

is a full decommissioning. Table 12 summarizes the issues for Hardy that influence the opinion of best outcome to pursue as part of this roadmap and Table 13 summarizes the risks by risk category.

Table 13. Hardy Issue Matrix Summary

Attribute	Considerations
Environment	Hardy powerhouse is on the SHPO list of historic places and the reservoirs depth contributes cool temperatures downstream to Croton. Peaking operations likely to receive pressure to change during relicensing (orange). Surrendering and partial removal could improve water temperature issues downstream of Croton while maintaining the powerhouse for SHPO purposes (yellow). Full removal would improve environmental conditions but require mitigation for the powerhouse listing on historic places (yellow).
Dam Safety	Auxiliary Spillway capacity is in need of repair and undersized to pass the PMF per new FERC regulations (red). Surrendering the license with the dam in place may provide a pathway for the dam falling under state rules which the spillway currently meets; however, meeting a different regulatory body doesn't lessen the risk and the 2018 inspection report rated the spillway as needing replacement in 3-5 years (red). Surrender – full or partial decommission eliminates this risk (green)
Economics	NPV ranges from -$310M to -$304M with spillway capital project (regulatory compliance); the significant driver for relicensing and surrender non-generation scenarios. Surrender partial and full decommission are less costly ranging from -$264 to -$186M (red). Divest likely not an option for Hardy given the expensive spillway CapEx spend requirement unless a future owner thinks they can achieve compliance with an alternative means.
People	Relicensing with new equipment better for staff than operating and maintaining (yellow). Full dam removal eliminates safety hazards to staff and public (green).
Reputation	Hardy provides substantial recreation with five major parks, 14 commercial marinas, HOAs, and private access docks. Relicensing or surrendering the dam in place would be status quo for these entities (green). Dam removal or partial removal would elicit public outcry but expect some agency support (red).

Table 14. Hardy Risk Matrix

RISKS					
Hardy	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 310M		
Relicense - Overhaul (refurbish units in kind)			-$ 304M		

RISKS					
Hardy	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Surrender - No-Power Generation			-$ 264M		
Surrender - Partial Decommission			-$ 186M		
Surrender - Full Decommission			-$ 196M		
Divest					

9.1.3 CROTON SITE SUMMARY

Croton does not have spillway constraints requiring extensive capital expenses to remedy; however, it does exhibit water temperatures outside the state criteria; fails to pass fish upstream and utilizes 100-plus year-old equipment that would require maintenance. Given the adequate spillway at Croton, the dam's ability to block the invasive sea lamprey, and the high density of private and commercial properties surrounding the reservoir pursuing a relicense option or the surrender with dam in place option all have qualitatively equal outcomes from a risk perspective. The lowest NPV option would be to surrender and not generate. Table 14 summarizes the issues for Rogers that influence the opinion of best outcome to pursue as part of this roadmap and Table 15 summarizes the risks by risk category.

Table 15. Croton Issue Matrix Summary

Attribute	Considerations
Environment	Barrier to upstream fish passage (and potentially self-sustaining populations), failure to meet water temperature criteria, reregulating reservoir, 2nd most popular fishery in state downstream of Croton (orange for alternatives that dam remains in place); however, sea lamprey barrier remains in place. Under dam removal alternatives sea lamprey exclusion would likely be required (yellow).
Dam Safety	Dam is in good shape for all alternatives (green) save for a partial decommissioning which slightly increases risks to workers and public (yellow)
Economics	NPV ranges from -$120M to -$18M with full decommissioning more expensive than relicensing but all scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it breaks (yellow). Full dam removal eliminates safety hazards to staff and public (green)

Attribute	Considerations
Reputation	Nearly 80% of the Croton reservoir shoreline is privately owned and includes significant residential development, a campground owned and operated by Croton Township and numerous small commercial recreational enterprises

Table 16. Croton Risk Matrix

RISKS					
Croton	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 67M		
Relicense - Overhaul (refurbish units in kind)			-$ 60M		
Surrender - No-Power Generation			-$ 18M		
Surrender - Partial Decommission			-$ 110M		
Surrender - Full Decommission			-$ 117M		
Divest					

9.1.4 MUSKEGON RIVER SYSTEM OVERALL SUMMARY

Consumers Muskegon River system of hydropower projects, Rogers, Hardy and Croton represent 36 percent of the total capacity from the 13 river hydro's and are host to the highest number of private and commercial parcels and businesses. The section of the Muskegon is popular recreation destination with a mix of private and public lands as well as diverse flat water and riverine habitats for both natural and recreation resources. Operationally, the system allows peaking at Hardy with reregulation occurring at Croton to simulate run of river conditions downstream. From the dam safety and particularly from a CapEx perspective, spillway upgrades are required at Rogers and Hardy and early contractor involvement have put estimates in the multiple hundreds of millions of dollars to achieve regulatory compliance. These three hydropower projects have a well-established legacy within the Muskegon watershed and as the risk matrix shows above, the qualitative assessment suggests significant changes could be in the future for this watershed. Table 16 summarizes the issues by risk criteria for the entire Muskegon River system.

Table 17. Muskegon River System Issue Matrix Summary

Attribute	Considerations
Environment	The three reservoirs contribute to warming which negatively impacts the aquatic resources downstream of Hardy and Croton where temperatures exceed state criteria. Stocking as mitigation for this supports the popular fishery downstream of Croton Dam however Michigan DNR believes without the reservoirs the fishery could be self-sustaining.
Dam Safety	Rogers and Hardy are currently out of FERC compliance for their ability to safely pass the probable maximum flood. Preliminary analysis indicates large new spillways are necessary to achieve compliance at tremendous costs without having a positive effect on revenue. Croton Dam meets the regulations in place.
Economics	Relicensing would likely come with additional mitigation costs associated with updating recreation amenities and access, water quality mitigation, dam safety requirements and fish passage and sea lamprey prevention or control measures. Divest option could provide economic benefit for some of the sites.
People	Existing equipment is approximately 100 years old and requires tremendous maintenance and is labor intensive to keep operating putting operators at medium risk. Upgrading the equipment in the powerhouses could reduce these risks while surrendering the license would also reduce the risks. Partial dam removal maintains risk to recreational boaters near the low head dam and improves safety for staff; full dam removal eliminates risk
Reputation	Rogers has a less developed shoreline compared to Hardy and Croton; however, all three provide tremendous flat-water recreation opportunities. Maintaining the reservoir in place would allow businesses and users to continue current uses; however, the surrender and decommission options would significantly alter the types of recreation opportunities.

9.2 MANISTEE RIVER SYSTEM

9.2.1 HODENPYL SUMMARY

Hodenpyl has notable dam safety requirements associated with an original, auxiliary spillway, aging generating equipment, as well as water temperatures that exceed the state criteria and attempts to mix the lake have been unsuccessful. The USFS is a significant landowner around the reservoir and could be a tough negotiator during relicensing due to their mandatory conditioning authority. Similarly, surrender and decommission scenarios would require agreement with USFS on the level of restoration to the lands currently inundated and used for recreation. Integral to the dam is a retired fish ladder, which may or may

not be consistent with regulator preferences for this site. Table 17 summarizes the issues for Hodenpyl that influence the opinion of best outcome to pursue as part of this roadmap and Table 18 summarizes the risks by risk category.

Table 18. Hodenpyl Issue Matrix Summary

Attribute	Considerations
Environment	The relicensing and surrender no-power generation scenarios continue to exceed water temperature standards (orange) while the partial decommissioning option would lead to improvements (yellow). The full decommissioning provides improvements to water quality and fish passage/habitat (green).
Dam Safety	Several dam safety improvements are required including emergency spillway, downstream wall, core wall (orange).
Economics	NPV ranges from -$139M to -$83M with full decommissioning more expensive than relicensing. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	The relicensing and surrender no-power generation similar risk (yellow). Full decommissioning would result in improved safety to the staff and public resulting (green).
Reputation	Relicensing scenarios would maintain existing conditions to recreation and commercial access (green). Surrender partial and full decommission would result in public outcry from losing flat water recreation (yellow).

Table 19. Hodenpyl Risk Matrix

RISKS					
Hodenpyl	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 83M		
Relicense - Overhaul (refurbish units in kind)			-$ 84M		
Surrender - No-Power Generation			-$ 59M		
Surrender - Partial Decommission			-$ 104M		
Surrender - Full Decommission			-$ 139M		
Divest					

9.2.2 TIPPY SITE SUMMARY

Tippy is the lower most dam on the Manistee River and simultaneously blocks invasive species and desirable fish passage upriver. Additionally, the facility contributes to water temperatures that exceed the state standards. The dam fails to possess a working fish ladder and removal of Tippy Dam would open dozens of miles of connected aquatic habitat in the Pine River which, according to Michigan Department of Natural Resources, would allow for self sustaining populations of anadromous fish; however, a small group of non-government organizations and agencies recognize a need for some small barrier to prevent sea lamprey from utilizing the same habitat. Tippy dam is also home to a population of endangered bats that roost in the spillway area which would make full decommissioning challenging. There are no notable dam safety issues. Tippy is the second largest by capacity within Consumers fleet of river hydros and the combination of low CapEx with steady revenue is a bonus for this Project. Because of this unique mix of issues at Tippy, exploring the divest option as part of a portfolio sale is warranted. If a buyer does not materialize, the presence of the endangered bats can help justify continuing to run the plant and maintain as necessary. Changes in revenue projections that increase over time would make investing in upgrading the units at Tippy more favorable. Table 19 summarizes the issues for Tippy that influence the opinion of best outcome to pursue as part of this roadmap and Table 20 summarizes the risks by risk category.

Table 20. Tippy Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing continues to block fish passage and water quality criteria are exceeded (orange). Surrender non-generation and partial decommissioning would be similar to current conditions (orange). Full decommissioning as improvement to fish passage but negative impact on bats and loss of sea lamprey barrier (yellow).
Dam Safety	Dam in good condition with no notable dam safety concerns requiring attention under any of the scenarios (all green).
Economics	NPV ranges from -$120M to -$6M with surrender partial or full decommission the most expensive. The surrender non-generation has the smallest negative NPV -$6M. Divest option could provide economic benefit (orange).
People	Relicensing and Non-generation & partial decommissioning would have similar risks to employees and public (yellow). Full decommissioning rated would eliminate risks to employees and public (green).
Reputation	Relicensing scenarios would maintain the status quo and there wouldn't be any changes to recreation and commercial access (green). Surrender partial and full decommission options would generate the most public acrimony from losing flat water recreation (yellow).

Table 21. Tippy Risk Matrix

RISKS					
Tippy	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 115M		
Relicense - Overhaul (refurbish units in kind)			-$ 120M		
Surrender - No-Power Generation			-$ 6M		
Surrender - Partial Decommission			-$ 65M		
Surrender - Full Decommission			-$ 66M		
Divest					

9.2.3 MANISTEE RIVER SYSTEM OVERALL SUMMARY

The Manistee River is one of Michigan's premier canoe float and finest steelhead, salmon and trout rivers due to its clear, cool water and natural woodlands. Operationally, Hodenpyl and Tippy provide 37,125 MW of capacity which represents 30 percent of the river hydro fleet capacity and with upgrades this could be higher. We anticipate considerable pressure from federal and state agencies to remove one or both of these dams during the upcoming relicensing to support aquatic resources and water quality. Based on the economic modeling surrender and decommissioning these dams would be the most expensive cost to Consumers (lowest NPV) suggesting there is an opportunity for divesting these assets or continuing to run them at the risk of enduring additional costs for mitigation in the subsequent license. Table 21 summarizes the qualitative risks to Consumers for the Manistee River Projects.

Table 22. Manistee River System Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing would maintain the status quo and continue to fail to meet water temperature criteria, which results in fish stocking as mitigation, fish passage (and access to upstream habitats) would persist. Tippy Dam houses endangered bats and prevents upstream passage of sea lamprey. Under surrender scenarios water quality would improve, access to aquatic habitats would likely lead to self-sustaining populations and sea lamprey access prevention would have to be built into the mitigation outcomes.
Dam Safety	Under the relicensing scenarios Hodenpyl would require upgrades to comply with FERC regulations. Under removal scenarios dam safety risks would be eliminated

Attribute	Considerations
Economics	All scenarios result in negative NPV. Divest option could provide economic benefit.
People	Risks to people mostly yellow with improvement to green for the full decommissioning alternative
Reputation	Risks to reputation are lowest with maintaining the status quo and relicense the dams from the recreation and human dimension and would increase to yellow under the surrender options where the reservoirs are removed.

9.3 AU SABLE RIVER SYSTEM

9.3.1 MIO SITE SUMMARY

Mio is the most upstream project on the Au Sable River and receives potentially contaminated sediments from upstream sources, exhibits water temperatures higher than state criteria, and is located at the upstream section of federally designated wild and scenic river. To support biological and aesthetic qualities, the state has designated the Au Sable River as a Natural River from its headwaters downstream to Loud Dam (meaning its presence is inconsistent with the states comprehensive plan for the river). The U.S. Forest Service (USFS) is a significant landowner in and adjacent to the facility boundary with 4(e) condition authority which would require attention during relicensing likely resulting in recreation resource mitigation solutions (e.g., upgrades to access sites and campgrounds, fish stocking). The dam is also listed as a primary site for a removal by the state citing likelihood that fish populations could be self-sustaining without the elevated temperatures provided by the reservoir. Complicating the overall assessment for which outcome to pursue for Mio is that the powerhouse, dam and spillway are in generally good condition. Given Mio's location high in the watershed where there are lower flows available for generation, the 3.9 MW powerhouse represents three percent of Consumers' river hydropower portfolio capacity. Exploring a portfolio sale that includes Mio would be an easy path for relieving risk from Consumers as the plant is in good shape. Failure to consummate a sale with a buyer, surrendering the license and full removal of the dam would be the next recommendation and using removal as part of a broader relicensing strategy for the entire portfolio may help offset relicensing debts. Table 22 summarizes the issues for Mio that influence the opinion of best outcome to pursue as part of this roadmap and Table 23 summarizes the risks by risk category.

Table 23. Mio Issue Matrix Summary

Attribute	Considerations
Environment	Relicense and surrender non-generation options maintain existing water quality issues, ongoing fish stocking or install fish passage system. MDNR letters indicate the Au Sable River is known to have areas of groundwater contaminated with PFAS and upstream Wurtsmith Airforce Base is a superfund site (orange). Partial decommissioning scenario would improve water quality (yellow). Full decommissioning improves water quality, fish passage and stream habitat restored. Also removes barrier for downriver paddle trips into downstream wild and scenic river (green)
Dam Safety	Dam is in good shape for all alternatives (green) save for a partial decommissioning which slightly increases risks (yellow)
Economics	NPV ranges from -$64M to -$12M with full decommissioning more expensive than relicensing but all scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it breaks (yellow). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Relicense options and no-power generation scenarios preserve the status quo without change to current recreational uses (green). Full decommissioning impacts public and private access along the reservoir (orange). Partial decommissioning reservoir would recede from current banks, but possible to maintain current recreational uses (yellow).

Table 24. Mio Risk Matrix

RISKS					
Mio	Environment	Dam Safety	Econ	People	Reputational
Relicense - Upgrade Units			-$ 39M		
Relicense - Overhaul (refurbish units in kind)			-$ 42M		
Surrender - No-Power Generation			-$ 12M		
Surrender - Partial Decommission			-$ 59M		
Surrender - Full Decommission			-$ 64M		

RISKS					
Mio	Environment	Dam Safety	Econ	People	Reputational
Divest					

9.3.2 ALCONA SITE SUMMARY

Alcona exhibits similar water temperatures issues as Mio and is mitigated by fish stocking the reservoir. To support biological and aesthetic qualities, the state has designated the Au Sable River as a Natural River from its headwaters downstream to Loud Dam (meaning its presence is inconsistent with the states comprehensive plan for the river). The dam is located near artesian springs potentially compromising its structural integrity and dam safety issues (potential inability to pass the PMF) are cause for concern and require extensive capital expense. As such, continuing to own and operate Alcona through a subsequent license term would require substantial capital investments and commitments. It is our opinion that this facility should be packaged as part of a portfolio to divest. Failure to consummate a sale with a buyer, surrendering the license and full removal of the dam would be the next recommendation and using removal as part of a broader relicensing strategy for the entire portfolio may help offset relicensing debts. Tables 24 summarizes the issues for Alcona that influence the opinion of best outcome to pursue as part of this roadmap and Table 25 summarizes the risks by risk category.

Table 25. Alcona Issue Matrix Summary

Attribute	Considerations
Environment	Relicense options and no-power generation fail to address water quality (temperature) issues and continue fish stocking or install fish passage system (orange). Partial decommissioning water quality improved (yellow). Full decommissioning water quality compliant, fish passage and stream habitat restored (green).
Dam Safety	Ongoing RIDM, auxiliary spillway remediation for relicense and surrender non-generation scenarios (red). Partial decommission alleviates most of the risk from the structure (yellow). Full decommission eliminates dam safety risk (green).
Economics	NPV ranges from -$75 to -$51M with relicensing slightly more expensive than the surrender non-generation scenario. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment (yellow) better for staff than operating until it needs repairs (orange). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Relicense options and no-power generation scenarios preserve the status quo without change to current recreational uses (green). No-power

Attribute	Considerations
	generation alternative maintains existing dam but would require dam safety repairs (yellow). Full and partial decommissioning could impact county campgrounds with boat docks and potential need to regrade Bamfield Road and protect Bamfield Road Bridge (road closure) (orange).

Table 26. Alcona Risk Matrix

RISKS					
Alcona	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 75M		
Relicense - Overhaul (refurbish units in kind)			-$ 75M		
Surrender - No-Power Generation			-$ 51M		
Surrender - Partial Decommission			-$ 61M		
Surrender - Full Decommission			-$ 65M		
Divest					

9.3.3 LOUD SITE SUMMARY

Loud provides peaking generation opportunities while recreation continues to be popular with anglers, downstream paddle trips and some flat-water fishing. Michigan DNR, Fisheries Report noted Loud Pond offers limited value for the fishery as an impoundment. Loud does not exhibit notable issues requiring extensive capital expense on the structures. The surrounding lands are owned by the USFS and Consumers and used for recreation. There are no private parcels associated with this project. Table 26 summarizes the issues for Loud that influence the opinion of best outcome to pursue as part of this roadmap and Table 27 summarizes the risks by risk category.

Table 27. Loud Issue Matrix Summary

Attribute	Considerations
Environment	Relicense options, and no-power generation scenario and partial decommissioning show negligible differences and would likely require continued fish stocking or install fish passage system (orange).

Attribute	Considerations
	Partial decommissioning would provide connected stream habitat for natural reproduction of fish (yellow) and full decommission would eliminate aesthetic issues of a partial removal (green).
Dam Safety	Dam is in fair shape for its age under all alternatives where dam would remain in place (relicense and surrender non-generation scenario (yellow). Full decommissioning which lowers this risk (green)
Economics	NPV ranges from -$65M to -$23M with partial and full decommission alternatives the most expensive however negligible difference between the two. Surrender non-generation alternative is the least deficit NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it breaks (yellow). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Full and partial decommissioning rated yellow: no private residence along shoreline but change in recreational use for Au Sable River camping sites, Loud Dam Campsite, Rollways Resort, and Westgate Scenic Overlook. Relicense options and divest rated green: no change to current recreational use of reservoir.

Table 28. Loud Risk Matrix

RISKS					
Loud	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 65M		
Relicense - Overhaul (refurbish units in kind)			-$ 55M		
Surrender - No-Power Generation			-$ 23M		
Surrender - Partial Decommission			-$ 51M		
Surrender - Full Decommission			-$ 50M		
Divest					

9.3.4 FIVE CHANNELS SITE SUMMARY

Five Channels reservoir backs up to Loud tailwaters linking the two together operationally. Overall, recreation is focused on shoreline uses and angling with modest fishery qualities. Five Channels does not exhibit notable issues requiring extensive capital expense on the structures. The surrounding lands are owned by the USFS and Consumers and used for recreation. There are no private parcels associated with this project. Table 28 summarizes the issues for Five Channels that influence the opinion of best outcome to pursue as part of this roadmap and Table 29 summarizes the risks by risk category.

Table 29. Five Channels Issue Matrix Summary

Attribute	Considerations
Environment	All relicensing options considered ok under status quo (green). Partial decommission: no evidence of temperature stratification (yellow). Fish passage could be improved. Full Decommissioning rated green: fish passage improved.
Dam Safety	Dam is in good shape for its age under all alternatives (green) save for a partial decommissioning which slightly increases risks (yellow)
Economics	NPV ranges from -$53M to -$19M with partial and full decommission alternatives the most expensive. Surrender non-generation alternative is the lowest deficit NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it breaks (yellow). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Relicense options, no-power generation alt, and divest rated green: no change to current recreational use of reservoir. Full and partial decommissioning rated yellow: reservoir would recede from current shoreline, but not drastically since it currently functions as a wide stream; easier to maintain existing recreational features.

Table 30. Five Channels Risk Matrix

RISKS					
Five Channels	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 53M		
Relicense - Overhaul (refurbish units in kind)			-$ 49M		
Surrender - No-Power Generation			-$ 19M		
Surrender - Partial Decommission			-$ 44M		
Surrender - Full Decommission			-$ 40M		
Divest					

9.3.5 COOKE SITE SUMMARY

Cooke reservoir receives stocking of walleye from MDNR, and fishery managers expect that removal of the dam would eliminate the need for stocking as the population could be self sustaining. Cooke does not exhibit notable issues requiring extensive capital expense on the structures. The surrounding lands are owned by the USFS and Consumers and used for recreation. There may be a single private parcel associated with this project. The dam is on the National Register of Historic Places. It is our opinion that this project should be packaged as part of a portfolio to divest. Table 30 summarizes the issues for Cooke that influence the opinion of best outcome to pursue as part of this roadmap and Table 31 summarizes the risks by risk category.

Table 31. Cooke Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing with reservoir in place (orange), Surrender with reservoir or partial reservoir (yellow) and Full decommissioning improves water quality and fish habitats/passage improvements (green).
Dam Safety	Dam is in good shape for its age under all alternatives (green) save for a partial decommissioning which slightly increases risks (yellow)
Economics	NPV ranges from -$87M to -$21M with partial and full decommission alternatives the most expensive with full decommissioning the most expensive scenario between the two. Surrender non-generation alternative is the least negative NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).

Attribute	Considerations
People	Relicensing with new or overhauled equipment better for staff (yellow) than operating until it breaks (orange). Partial removal maintains risk to staff and public. Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Relicensing and no-power generation alternative preserve status quo for recreation users. Full decommissioning rated red. Dam is on National Register of Historic Places. Impacts to Iargo Springs Recreation Area, Cooke Dam Public Access and Boat Launch, and Partial decommissioning rated orange: Some of the dam can be maintained for historic preservation purposes. Reservoir can partially be maintained for recreational use.

Table 32. Cooke Issue Matrix

RISKS					
Cooke	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 57M		
Relicense - Overhaul (refurbish units in kind)			-$ 55M		
Surrender - No-Power Generation			-$ 21M		
Surrender - Partial Decommission			-$ 85M		
Surrender - Full Decommission			-$ 87M		
Divest					

9.3.6 FOOTE SITE SUMMARY

Foote is the lowermost dam on the Au Sable and experiences elevated water temperatures. Foote is also the only reservoir on the Au Sable that receives notable levels of motorized recreation. Because it is the most downstream dam it does block fish passage and invasive species from passing upriver. The tailwaters are popular salmon and steelhead fishery. The surrounding lands are owned by the USFS and Consumers and used for recreation with multiple parks and boat ramps. There is a subdivision and a homeowner association with community docks for its residents. Full removal would provide benefits to fishery management by removing a barrier to a large river while provide the most risk to the people and reputation of Consumers by drastically changing its use. It is our opinion that this project should be packaged as part of a portfolio to divest. Table 32 summarizes the issues for Foote that influence the opinion of best outcome to pursue as part of this roadmap and Table 33 summarizes the risks by risk category.

Table 33. Foote Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing prevents fish passage of steelhead and salmon but does also prevent sea lamprey and is only reservoir on Au Sable with notable motorized reservoir recreation (orange), water quality continues to exceed state criteria. Full and partial decommissioning rated yellow for improvements to passage and water quality: Dam prevents invasive species (sea lamprey) further upriver. Water quality and fish passage improved.
Dam Safety	Dam is in fair shape for its age under all alternatives (yellow). Full removal and divest eliminate risks (green)
Economics	NPV ranges from -$100M to -$22M with partial and full decommission alternatives the most expensive scenario. Surrender non-generation alternative is the least negative NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new or overhauled equipment better for staff (yellow). Partial removal maintains risk to staff and public (orange). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Partial decommission would impact recreation access and parks (orange) Full decommissioning rated red: significant changes to recreational use (campsites and large number of cluster boat docks).

Table 34. Foote Issue Matrix

RISKS					
Foote	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 88M		
Relicense - Overhaul (refurbish units in kind)			-$ 94M		
Surrender - No-Power Generation			-$ 22M		
Surrender - Partial Decommission			-$ 100M		
Surrender - Full Decommission			-$ 100M		
Divest					

9.3.7 AU SABLE RIVER SYSTEM OVERALL SUMMARY

The Au Sable River is a world-famous trout stream and surrounded by Huron National Forest making it a popular recreation destination. Consumers owns about 3,500 acres near the six dams; much of which is leased to county and townships for parks, campgrounds, and boat rentals. Mio, Cooke and Five Channels are all listed on National Register of Historic Places. The Au Sable is a favorite with paddlers and the 23-mile stretch of river from Mio to Alcona is designated a National Scenic River. The lower watershed projects are located closer together providing more flatwater boating and fishing opportunities closer to Oscoda. As for dam safety, Consumers has been conducting a Risk Informed Decision Matrix process at Alcona as one of the first using this framework with FERC for almost 10 years to address Probable Maximum Flood. In addition, artesian springs near the dam may provide additional risks. Collectively, the dams have 41 MW of capacity; however, the units inside the powerhouses consist of original equipment installed about 100 years ago. Upgrading the units to modern, more efficient turbines would increase generation; however, under all scenarios investigated, each has a negative NPV due to the amount of costs required for improving the efficiency, addressing forecast CapEx spend, operations and maintenance and the forecast for revenues to decrease over time. Risks to Consumers staff across the Au Sable portfolio of projects is generally moderate due to the age of the equipment and pace of repairs to keep them operating. Consumers has a long history in the region with first bringing hydropower into the watershed and later through collaborative conservation and restoration practices of replanting the forests. The dams themselves provide access for recreation and fish stocking supports the recreational fishing. Collectively, the Au Sable River projects likely have value at market and divesting could be the best path for reducing risk and costs for Consumers. Table 34 summarizes the qualitative results for the Au Sable River.

Table 35. Au Sable River Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing would maintain the status quo and upstream sites Mio and Alcona would continue to have issues meeting the state temperature standards which Consumers mitigates with fish stocking. This section of the river is also extremely popular for canoe and fishing and is a National Scenic River. Downstream reservoirs have different fishery and flat water based recreation demands. Foote dam provides the barrier so sea lamprey do not migrate and reproduce further upstream in the watershed. Surrender scenarios with dam decommissioning outcomes would improve water quality and aquatic habitats throughout the entire length of the river and would likely lead to self sustaining populations of fish. Sea lamprey access prevention would have to be built into these outcomes.
Dam Safety	Under the relicensing scenarios for the Au Sable River, Alcona would require upgrades to comply with FERC dam safety regulations resulting in the lowest ranking for this site; however, most of the other dams are in satisfactory condition based on condition assessments.

Attribute	Considerations
Economics	All scenarios result in negative NPV. Divest option could provide economic benefit.
People	Risks to people mostly associated with aging equipment and dam safety. Alcona is the only site on the Au Sable with notable dam safety concerns associated with the artesian springs and need to upgrade the spillway to pass the PMF. Scenarios with upgraded generation equipment or no dam at all pose the lowest risk to staff.
Reputation	Risks to reputation are lowest with maintaining the status quo and relicense the dams from the recreation and human dimension and would increase to yellow under the surrender options where the reservoirs are removed.

9.4 GRAND RIVER WEBBER DAM

9.4.1 WEBBER SITE SUMMARY

The Webber facility is a modest size hydroelectric operation with few serious safety hazards to consider as risks to Consumers. From the environmental perspective, fisheries and recreation are prominent drivers of future relicensing negotiations. The state operates the fishway at the site and it may soon become the most down stream barrier depending on the outcome of a structure in Grand Rapids. Salmon, steelhead, and smallmouth are popular with operational shutdowns occurring during spring salmonid smolt migrations. Future conditions may be developed to accommodate sturgeon in a similar way further limiting generation periods. The dam and downstream areas are popular angler access sites. The portage around the dam was raised as a concern by the MDNR and is likely to receive attention during relicensing. It is our opinion that Webber should be considered under the divest alternative. Table 35 summarizes the issues for Webber that influence the opinion of best outcome to pursue as part of this roadmap and Table 36 summarizes the risks by risk category.

Table 36. Webber Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing dam and no-power generation option blocks fish passage but also sea lamprey, portage remains issue, and seasonal shutdowns to protect fishery (orange). Partial and full removal improve mixing and water quality as well as address important seasonal fish life stages; lamprey barrier lost (yellow). Divest eliminates risk (green).
Dam Safety	Dam is in good shape for its age under all alternatives (green) save for a partial decommissioning which slightly increases risks (yellow)

Attribute	Considerations
Economics	NPV ranges from -$48M to -$17M with partial and full decommission alternatives the most expensive with full decommissioning the most expensive scenarios between the two. Surrender non-generation alternative is the lowest NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it needs constant maintenance (orange). Full decommissioning eliminates safety hazards to staff and public (yellow)
Reputation	Partial decommissioning would potentially leave a six-foot weir/sea lamprey barrier in place posing a hazard to canoe/kayakers and significantly reducing the reservoir size (orange). All other scenarios forecast positive angles to Consumers reputation (green)

Table 37. Webber Issue Matrix

RISKS					
Webber	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 43M		
Relicense - Overhaul (refurbish units in kind)			-$ 41M		
Surrender - No-Power Generation			-$ 17M		
Surrender - Partial Decommission			-$ 46M		
Surrender - Full Decommission			-$ 48M		
Divest					

9.5 KALAMAZOO RIVER – ALLEGAN (CALKINS BRIDGE) DAM

9.5.1 CALKINS BRIDGE SITE SUMMARY

The popularity of Calkins Bridge reservoir for recreation and private and commercial property investment elevates the community concern and reputational considerations while exploring options for this site. Downstream tailrace fishing is extremely popular at the state-maintained fishing pier and access area. Complicating the decision process for roadmap outcomes is the presence of a Superfund site tied to historic paper mill activity on and along the Kalamazoo River upstream of Calkins Bridge dam with known

contaminated sediments settling into the upper reservoir. The dam itself is in suitable condition but all options that consider decommissioning must also consider its integration with the road and how that would impact removal costs. The site is the downstream structure blocking desirable fish passage and restricting undesirable invasive species. Table 37 summarizes the issues for Calkins Bridge that influence the opinion of best outcome to pursue as part of this roadmap and Table 38 summarizes the risks by risk category.

Table 38. Calkins Bridge Issue Matrix Summary

Attribute	Considerations
Environment	Relicensing and no-power generation options maintain status quo satisfying popular recreation while the dam presents barrier to upstream passage (yellow). Partial decommissioning improves fish passage while maintaining sea lamprey barrier but potentially mobilizes contaminated sediments in upper end of reservoir from upstream superfund site (orange). Full decommission improves fish passage, allows sea lamprey upstream, and potentially mobilizes sediments in upper reservoir (red)
Dam Safety	Dam is in good shape for its age under all alternatives (green) save for a partial decommissioning which slightly increases risks (yellow)
Economics	NPV ranges from -$127M to -$17M with partial and full decommission alternatives the most expensive with full decommissioning the most expensive scenario between the two. Surrender non-generation alternative is the lowest NPV. All scenarios result in negative NPV (red). Divest option could provide economic benefit (orange).
People	Relicensing with new equipment better for staff than operating until it breaks (yellow). Partial removal maintains risk to staff and public (orange). Full dam removal eliminates safety hazards to staff and public (green)
Reputation	Relicensing and no-power generation options no change for waterfront properties (green) Partial decommissioning rated orange: impact to waterfront properties Full decommissioning rated red: large impact to significant amount of waterfront properties

Table 39. Calkins Bridge Risk Matrix

RISKS					
Calkins Bridge	**Environment**	**Dam Safety**	**Economics**	**People**	**Reputation**
Relicense - Upgrade Units			-$ 37M		
Relicense - Overhaul (refurbish units in kind)			-$ 35M		
Surrender - No-Power Generation			-$ 17M		
Surrender - Partial Decommission			-$ 109M		
Surrender - Full Decommission			-$ 127M		
Divest					

10 TIMELINE FOR ROADMAP SCENARIOS

All relicense and surrender scenarios are assumed to follow the same schedule between now and filing of the Notice of Intent (NOI) and Pre-Application Document (PAD) to FERC because they require FERC approval to achieve these outcomes. The Divest option is available now and in the future. The NOI and PAD are required to be filed between 5 and 5.5 years before the license expires to account for the licensing process (development of the application in consultation with stakeholders and agencies) and license processing from FERC before the license expires. This requires Consumers to file the NOI and PAD no sooner than January 1, 2029, and no later than July 1, 2029. e discuss the steps Consumers should take and the timing under the scenarios in the subsections below.

10.1 DIVEST

Prior to committing to relicensing or surrendering, Consumers can start taking actions immediately to market the hydropower portfolio to potential buyers. Consumers can meet with banks and brokers specializing in hydropower portfolios M&A, working with an owner's engineering representative to conduct an Independent Engineer review on the portfolio to advise on strategic opportunities or risks that potential buyers may try to leverage in negotiations, and prepare a digital data room for potential buyers to do their own due diligence. If buyer(s) are interested in the portfolio, Consumers could ask for bids, review terms of the offers, consider options, and negotiate a sale ahead of having to make a commitment to relicense or surrender. Considering the value of portfolios making the news in the last 5 years there is appetite for investment in hydropower assets. Consumers can pursue this scenario without compromising either the relicensing or surrender pathways. The option to divest an asset or the entire portfolio would also be available to Consumers after subsequent licenses have been received from FERC and really depends on Consumers' business model. Divesting does not have to include every Project; however, there is some strategic value in offering a mix of value within the portfolio.

10.2 RELICENSE

If committed to relicensing, Consumers can proceed with near term regulatory requirements while also maintaining a schedule to file the PAD and NOI on time and follow the FERC relicensing schedule. Within the relicensing process, Consumers would consult with agencies and stakeholders and have the potential to negotiate settlement agreement outlining terms for the next license including duration, mitigation measures and plans for maintaining the projects and amenities to meet license obligations. For projects that would receive upgrades or overhaul generating equipment, the licensing proposal would detail the increase in capacity (for upgrades) and timing of repairs into the license application for FERC approval. Implementing these upgrades in the first years of the license allows for longest amount of time to generate revenues at higher capacities and efficiencies.

Should Consumers seek consultants for strategic preparations before starting the licensing process, consultants could be hired a few years ahead of the NOI and PAD filing deadline. Given the voluminous

amount of information for each site and the timing of 11 of the 13 sites entering relicensing in the same year, hiring consultants early could be beneficial to both Consumers and the consultants to fully understand the resource issues, quality of available data, and options to prepare a unified strategy prior to documenting the resources in the PAD.

10.3 SURRENDER

If committed to surrendering the license, the process is similar as relicensing in that FERC and the agencies must approve the plan to surrender and address the existing structures. If a decision to surrender requires additional information, there is time for early study of environmental risks to refine the decommissioning plan and strategic approach to present during consultation. Opportunity exists to initially purse the surrender and decommission – no-power generation alterative and continue generating and collecting revenues until the consultation process matures and the surrender plan comes into focus. This strategy could allow the sites to operate for 5-20 years before a surrender plan is approved by FERC. Ultimately this strategy does have its place for a few sites like Tippy where the reservoir provides a benefit to the endangered bats overwintering in the spillway, but Consumers must also be prepared for a decommissioning and full removal alternative. By pursuing the surrender scenario and starting with the no-power generation alternative the requirement to remove the dams entirely would fall to the state agency's recommendations and conditions and FERC ultimately balancing the resources and making the final order on whether to accept the surrender.

Strategic timelines for each site were not investigated at this time. The next step for pursuing the surrender options at any site would be to conduct baseline environmental condition studies like bathymetry (to help estimate volumes of sediments), sediment characterization and contamination evaluation, restoration acreage estimates and develop internal plans and schedules. This process could occur in stepwise manner until sufficient information was available to develop a plan and schedule for the surrender and consult with stakeholders to refine the plan. Table 39 summarizes a high-level planning schedule for task durations for a hypothetical surrender.

Table 40. Planning Level Schedule for Surrender Process

Activity	Duration
Internal strategy and preparation	6-9 months
Prepare Initial Consultation Document	6-9 months
Convene Stakeholders	1-3 months
Propose Study Plans (e.g., bathymetry, sediment characterization, hydrology and hydraulics)	2-3 months
Consult with Stakeholders on Study plans	2 months
Revise Study Plans and Execute Field Work	1-2 seasons
Report Results – Consult with Stakeholders	3-12 months
Prepare Application to FERC	3-6 months
Respond to FERC AIRs	1-24 months
Prepare Detailed Design	Simultaneous with FERC Review
Permits, Approvals Needed to Start Construction	1-24 months post FERC Approval
Removal	12 months

11 CONCLUSION

Our analysis of the 13 river hydropower projects involved outlining and evaluating various future scenarios based on their condition, environmental risks, and dam safety risks. We used qualitative risk matrices and quantitative net present value (NPV) results to assess the scenarios at a high planning level. In addition to WSP economic model, Consumers Energy provided additional inputs for comparison with internal assumptions. While the costs used in our assumptions were approximate, they were consistent enough to provide equal measurements across all scenarios. Qualitative risks assessed with our analysis included the environment, dam safety, economy, people, and reputation. Although additional criteria weighting could have refined the results further, our level of detail was sufficient to inform our opinion regarding the current condition and level of risk for each scenario.

Table 40 summarizes the results of the WSP decision matrix and provides an opinion of best value outcome for every site that considers risk exposure and hydropower asset debts to Consumers. Our opinions take into account our estimates of future licensing negotiations, the age and costs required to operate and maintain the structures and generating units, necessary upgrades for operation and compliance with relicensing studies and negotiations, and NPV calculations based on high-level assumptions. Our opinion is based on our industry experience with relicensing, environmental compliance, and engineering of hydropower assets, and providing due diligence to buyers of hydropower portfolios. While our report does not consider the community impacts of the hydropower reservoirs on local businesses, residents, and primary and secondary economic inputs, we acknowledge that hydropower is an interdisciplinary energy generating asset. Overall, this opinion is formed with the available information within the timeline to deliver this report. While the assets have demonstrated strong performance over a century, their age and maintenance needs, coupled with evolving environmental regulations and safety standards and the CapEx required to maintain the status quo for generation has raised questions on the value of keeping them operational for another 50 years.

Table 41. Results of Decision Matrix

Site	WSP First Opinion	WSP Opinion Notes
Muskegon River		
Rogers	Surrender – Full Decommission	Scenario provides value across environment, dam safety, and people at the second lowest NPV. Initially this option would be negative to Consumers reputation from property owners and businesses that benefit from the reservoir.
Hardy	Surrender – Full Decommission	Scenario provides value across environment, dam safety, and people at the second lowest NPV. Initially this option would be negative to Consumers reputation from property owners and businesses that benefit from the reservoir. Its unlikely the project could be sold on the open market with the spillway not meeting PMF. The Surrender non-generation scenario would require

Site	WSP First Opinion	WSP Opinion Notes
		the spillway project making for an expensive alternative but could preserve reputation. Overhauling or upgrading the units do not generate sufficient revenues to offset spillway and upgrade or overhaul costs.
Croton	Divest or Surrender – Non-Power Generation	Divesting should be explored. Best alternative value based on risk matrix is the surrender non-power generation scenario and NPV. The surrender non-power generation option NPV is half the NPV for upgrading or overhauling the units (similar qualitative risk outcomes).
Manistee River		
Hodenpyl	Divest or Surrender – Full Decommissioning	Divesting should be explored as best option for Consumers. Best alternative value based on risk matrix is the surrender option full decommission as it would address environmental, dam safety and people risk; however, the option that fully reduces the risks to Consumers also has this has the highest negative NPV.
Tippy	Divest or Surrender – Partial Decommissioning	Divesting should be explored as best option for Consumers. Best alternative value from qualitative risk is not as clear as both surrender scenarios and both relicense scenarios have equal risk outcomes but in different ways. The NPV is smallest for the surrender – partial decommission scenario
Au Sable River		
Mio	Divest or Surrender – Full Decommissioning	Divesting should be explored as best option for Consumers. Best alternative value is the surrender option from a qualitative risk assessment; however, this has the highest negative NPV and it fully reduces risks to Consumers.
Alcona	Divest or Surrender – Full Decommissioning	Divesting should be explored as best option for Consumers. Best alternative value is the surrender option from a qualitative risk assessment; however, this

Site	WSP First Opinion	WSP Opinion Notes
		has the highest negative NPV and it fully reduces risks to Consumers.
Loud	Divest or Surrender – Full Decommissioning	Divesting should be explored as best option for Consumers. If not, the best from risk perspective is surrender full decommissioning. Full decommission provides highest qualitative rank at the highest NPV.
Five Channels	Divest or Surrender – Non-Power Generation	Divesting should be explored as best option for Consumers. Both relicensing alternatives and the surrender non-generation provide equal qualitative risk profiles. Best value in NPV is surrendering non-generation which shares similar risk profile as relicensing options.
Cooke	Divest or Relicense - Overhaul	Divesting should be explored as first option for Consumers. Both relicensing alternatives provide best qualitative risk value with overhaul having the smallest NPV; surrender full decommission has same qualitative risk as relicensing scenarios but larger negative NPV.
Foote	Divest or Surrender – Non-Power Generation	Divesting should be explored as best option for Consumers. Surrender non-power generation alternative provides best qualitative risk rank and lowest negative NPV. Foote dam's role in lamprey exclusion favors keeping the dam in place so the cost to generate electricity in the future yields negative relicensing NPVs due to costs to upgrade, overhaul and maintain the Project.
Grand River		
Allegan/Calkins Bridge	Divest or Surrender – Non-Power Generation	Divesting should be explored as best option for Consumers. Both relicensing alternatives and surrender non-generation provide equal qualitative risk values; however, relicensing scenario NPV more expensive than surrendering non-generation.
Kalamazoo River		

Site	WSP First Opinion	WSP Opinion Notes
Webber	Divest or Surrender – Full Decommission	Divesting should be explored as best option for Consumers. Surrender – full decommission provides highest value in qualitative risk to Consumers. Relicensing and surrender with dam in place show equal risks but less than full decommission. From NPV perspective, full decommission is largest negative NPV and surrender non-generation is the least negative NPV.

11.1 NEXT STEPS

Our work here is part road map and part decision tools to help support the decision process for each Project. We recognize and recommend that additional work be performed in the areas of the risk matrices and the economic model. Specific to the risk matrix, more work is recommended to tailor the matrix and use of it as a decision tool to Consumers' preferred risk appetite by weighting the attributes and developing a risk scoring scale to quantify and measure the outputs to differentiate between scenario outcomes. As the risk matrix is currently configured, risks are qualitatively measured with a color against the risk category with all categories weighed equally. This combination of (1) a lack of weighting, and (2) a lack of rubric to measure against, results in little differentiation between some of the scenarios or some scenarios with the same risk profile but in opposite outcomes (e.g., relicense and decommission could have same overall risk profile based on the scores for each attribute). Consumers could improve upon the current risk matrix tool by incorporating Consumers own business directives into the framework or creating a hierarchy among the attributes and how to consider the NPV model results.

Similarly, the economic model relies on a combination of budgeted costs and planning level cost estimates, general revenue inputs and assumptions on the amount and timing of CapEx and OpEx spend across the scenarios. Our team has little insight into the Public Service Commission's rate forecasts for revenues and relied upon the best information available, which was provided by Consumers which we believe to be based on business forecasts that factor in future generation scenarios based on the Consumer Integrated Resource Plan. Our economic model illustrates the relationship between CapEx and OpEx spend and revenue over time; however, because the revenue is forecast to decline, the CapEx and OpEx spend in the near term combine with the limited increase in capacity to generate substantial amounts of revenues, results in all scenarios having a negative NPV after 50 years. The application of these negative NPV across the scenarios could be further defined in combination with the risk matrices as it could be a weighted criteria or a casual consideration. What it can provide is a quantification and order of magnitude estimate relative to other dams to understand where value might be extracted from future investments relative to the amount of risks Consumers wishes to carry.

Additional items for consideration as far as next steps with the Road Map and Decision Tools:

11.1.1 DIVEST SCENARIO

- Prepare a Data Room
- Consider an owners engineer with experience in due diligence
- Consult experts in the banking and brokerage of hydropower assets
- Identify asset or portfolio of assets to sell
- Put portfolio on the market.

If Consumers business preferences are for relicensing or surrendering, the following items for consideration would help inform the decision to relicense or surrender:

Data that should be considered prior to making a relicensing or surrender decision:
Preliminary Investigation on:

- Preliminary investigation on sediment distribution, volumes and quality, etc. in reservoirs considered for decommissioning.
- Preliminary investigation on dams potential for listing with the National Register of Historic Places (cultural resource evaluations)
- Preliminary habitat modeling for estimating restoration area sizes, slopes, topography, and planting concept plans.
- Hydraulic/hydraulic assessments of current operations and for understanding potential future conditions (e.g., with partial and full decommission alternatives)
-

11.1.1.1 *STRATEGIC CONSIDERATIONS*

- Removal of any dam, whether partial or full decommissioning should proceed from upstream to downstream
- Preliminary strategy on the timing of a surrender filing that balances generation with studies and potential off takers for the surrender non-generation scenario

APPENDIX

A ECONOMIC MODEL

APPENDIX

A-1 WSP REVIEW OF TURBINE UPGRADE AND OVERHAUL COSTS

Appendix A

APPENDIX A-1

WSP INDEPENDENT REVIEW OF COSTS TO UPGRADE AND OVERHAUL TURBINE EQUIPMENT

Investments can be made to improve the efficiency of existing generating units through overhauls, generator rewinds, or turbine replacements. In particular, as plants reach the license renewal period, upgrades to existing facilities to increase capacity or energy output are typically considered. Consumers produced an internally prepared planning estimate of upgrading or overhauling their generating units and estimated the resultant increase in generation. WSP reviewed existing information related to the current equipment, plant efficiency, and annual generation and the potential upgrades or overhauls and compared the cost estimates with industry publications and our own professional experience in designing and overseing upgrades and overhauls at hydroelectric projects throughout North America.

UNDERSTANDING EXISTING CONDITIONS

Consumers' generation equipment is mostly original equipment constructed and put into operation about a hundred years ago. Because each hydropower project is designed specifically for the location of the dam, each plant has turbine-generator units designed specifically for the amount of flow and head a site provides. Additionally, operations were designed for the era they were installed. As the transmission grid expanded and electrical use throughout Consumers service territory evolved, so to did the environmental regulations and operating conditions. As such, the existing Francis units are designed for an operating regime that is outdated which results in generation below a sites potential. Initiating capital improvement projects that upgrade or overhaul the equipment would increase the output from the powerhouses.

UNDERSTANDING WORK INSIDE HYDRO POWERHOUSES - UPGRADES AND OVERHAULS

Upgrade is the removal of an incorrectly sized unit and replacement with a more efficient, modern unit that can generate more electricity, more regularly, across a wider range of flow conditions. An overhaul is considered the restoration of an existing unit (e.g., rewinding the generator, repair the runner and wicket gates, etc.) but rely on the original unit designs and equipment. Upgrades to turbines requires dismantling generators and bringing in new equipment. Installing new equipment would require investigation into access and current capabilities of such things as access (e.g., road, entry doors) or equipment needs (e.g., overhead crane upgrades). A larger crane may require structural analysis of the load bearing portions of the structure (e.g., walls, foundation). The higher efficiency units may occupy larger spaces in

the powerhouse so changes to the structures (expanding concrete and repouring to accommodate new equipment) could also be required. Similarly, upgrades to the generators could require changes to the electrical equipment in the powerhouse as well as transmission to the substations. Lastly, getting equipment out of the powerhouse and new equipment in may require upgrades to the access roads or even the openings to the powerhouses depending on the size of the new equipment; which given the age of the powerhouse could require consultation with Michigan SHPO and potential mitigation measures. The value of this work would be increased generation and resulting revenues. These upgrades would not address dam safety or alter flows, change temperature patterns or address fish passage as these types of projects are limited to inside the powerhouse. Table A-1 summarizes the types of equipment inside a hydro powerhouse and the potential number of components that could be upgraded or overhauled. Each upgrade or overhaul at a particular powerhouse needs to be planned specifically for the site conditions of that powerhouse including access, civil, structural, electro-mechanical equipment, and electrical tranmission. Upgrades to portions of the equipment may require updates to other components of the system to ensure the safest and most reliable use of the upgraded or overhauled equipment.

Table A-1. Key Components of a Hydroelectric Project Upgrade or Overhaul

Part Requiring Upgrade or Overhaul	Key Components
Powerhouse	Overhead powerhouse crane Gantry crane intake Gantry crane tail race Trash rack Intake gates Tail race gates Penstock
Electrical BoP*	Switchgear - Protection & Control System (P&CS) Switchboards Motor Control Centers (MCCs) Battery room Generator step-up transformers (GSU) Sub-station Control room

Appendix A

Part Requiring Upgrade or Overhaul	Key Components
Generator	Excitation System Upper bracket Lower bracket Brakes Generator guide bearing Thrust bearing Thrust pads Thrust runner Bearing cooling coils Stator air coolers Cooling water system (piping and pump) Stator Winding Core Frame & Sole plates Rotor Poles Rim Frame
Turbine	Hydraulic Power Unit - HPU Governor => Servo motors Turbine guide bearing Inlet valve Turbine regulating mechanism (distributor) Servo Motors Operating ring Levers Links Wicket gates Headcover Bottom ring Shaft seal - Packing box Shaft Runner
Mechanical BoP*	Compressed air system Fire protection system HVAC Sump pumps Oil/Water separator
Embedded Parts	Stator frame sole plates Lower bracket sole plates Stay ring / vane Discharge ring Draft tube Spiral case Penstock

*BoP – Balance of Plant

Appendix A

INDUSTRY STANDARDS – LITERATURE REVIEW

To verify the Consumers cost estimates reasonableness we performed a literature review to compare published costs of overhaul hydropower plants. The results of the literature review were escalated into the same year as Consumers data and evaluated for the precision to ultimately evaluate if the costs were reliable and appropriate for use in our economic model. The following sections discuss the data sources and steps in this process.

Department of Energy – National Renewable Energy Lab Report

The U.S. Department of Energy published reports on hydropower costs relative to potential increases in hydropower throughout the U.S. including costs to add hydropower to existing dams, new construction of hydropower plants, as well as utiliizing existing canals or conduits. Based on the United States-only subset of the collected data, the cost of constructing a hydropower plant on existing conduits, on non-powered dams, or along new, undeveloped stream reaches has ranged from $1000 to $9000 per kilowatt (O'Conner 2015).

In addition to the construction of power generating facilities on previously unpowered infrastructure or stream reaches, costs estimates were also collected for the installation of additional units in existing powerhouses and the rewinding of existing generators; the average addition of a new unit to an existing powerhouse has cost $1,930 per kilowatt, and the average generator rewind has cost $114 per kilowatt, but both are subject to strong economies of scale based on the size of the units involved (O'Conner 2015).

National Hydropower Association (Navigant Study 2009)

In early 2009, the National Hydropower Association (NHA) commissioned Navigant Consulting to conduct a study examining the hydropower industry's job-creation and capacity-growth potential. In assessing the potential for new generating capacity, the study looked at several major classes of hydropower technology and project costs to install the technology. Table A-2 summarizes the installed costs compiled by NHA.

Table A-2. Installed Project Costs for Various Types and Sizes of Hydro Projects (NHA 2023)

Hydropower Technology	MW Range	Installed Cost ($/kW)	Discussion
Conventional Hydro (impoundment)	50 (average)	$1,000-$5,000	A mature technology, conventional hydro falls at the lower end of the range of installed costs, particularly for upgrade projects at existing sites. New dams and greenfield sites are more expensive.
Microhydro	< 0.1	$4,000-$6,000	The installed cost for low-impact hydro systems is not expected to decline in the near term.
Run of River (diversion).	Approx. 10	$1,500-$6,000	Similar to conventional hydro, installed costs for run-of-river can vary widely.

Appendix A

Hydropower Technology	MW Range	Installed Cost ($/kW)	Discussion
Pumped Storage	>500	$1,010-$4,500	Traditional pumped storage is a proven technology and costs are not expected to decline going forward. The new underground pumped storage technology has been quoted at $2,000/kW and cost declines can be expected going forward, if the concept proves itself.

Source: https://www.hydro.org/waterpower/why-hydro/job-creation/navigant-study/ as viewed on NHA website. The Navigant Study is from 2009

ESCALATION OF COSTS

Both the DOE and NHA cost estimates for upgrades and overhauls are more than 10 years old. Although the technology doesn't change the price of materials and services to execute these types of projects does. A number of organizations help industry by tracking prices over time and developing escalation tools so project planners and managers can understand prices from the past in today's dollars. Indices for escalations are based on actual historical data.

Engineering News-Record (ENR) publishes monthly construction cost indices for 20 cities in the U.S. Recent ENR construction cost indices for 2022 showed 14.7% annual increase and for materials a 31.6% annully and cost of steel up over 39% in the same period which provides evidence that even in the last few years project costs have increased substantially. The U.S. Army Corps of Engineers (USACE 2021) prepared the Civil Works Construction Cost Index System (CWCCIS); an escalation calculator to provide historical and forecasted cost indices for use in escalation USACE civil works project costs. Although the tool was developed for the USACE, the USACE is the largest federal provider of hydropower in the U.S. and has access to a large dataset related to hydropower powerhouse costs and is therefore a reasonable dataset to escalate. This escalation tool was used to bring cost information summarized in the literature into current dollars.

LEVELS OF GRANULARITY IN COSTS – ENGINEERING ESTIMATING LEVELS

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, cost accuracy is generally assumed to increase as project development nears completion. As such, construction stage cost estimates are necessarily considered the most accurate [and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE)].

Construction Cost Estimate Classes

CLASS 5

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would

require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its **accuracy ranges -50% on the low side and +100% on the high side**.

Class 5 cost estimate accuracy range: -50% to +100%
Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

CLASS 4

A Class 4 estimate is considered a feasibility study estimate. It is used by organization heads and construction managers for strategic business planning. A more detailed approach is required since this would determine the viability of the project. Moreover, alternative project schemes are evaluated for their economic value. Feasibility studies for industrial constructions often require the definition of roughly around 1% to 15% of the project. Aside from basic descriptions, other inputs that influence project costs include:

- Process flow diagrams (PFDs)
- Major construction activities
- Equipment lists

Class 4 is more detailed than what we have for our economic model at this stage of model development.

WSP ECONOMIC MODEL

WSP investigated upgrade and overhaul calculations prepared by Consumers for its reasonableness, increase in generation, and project costs. Because these are Level 5 planning estimates the constructed costs for upgrades or overhauls can vary widely.

Table A-3 summarizes Consumers powerhouse capacities and potential increases in power under upgrade or overhaul scenarios with an escalated cost per megawatt metric. Tables A-4 summarize WSP costs to upgrade units while Table A-5 summarize the upgrade costs for Consumers and WSP used in the report.

Appendix A

Table A-3. Consumers Estimates for Upgrades and Overhauls

Site	Consumers Estimated Cost for Upgrade 2019 ($)	Consumers Estimated Cost for Overhaul 2019 ($)	Turbine Upgrade Cost in 2022 $ (2019 Cost Multiplied by Escalation Factor of 1.31884 per USCOI)	Turbine Overhaul Cost in 2022 $ (2019 Cost Multiplied by Escalation Factor of 1.31884 per USCOI)
Rogers	$17,185,500	$17,928,000	$22,665,000	$23,644,000
Hardy	-	-	-	-
Croton	$35,289,000	$25,446,600	$46,541,000	$33,560,000
Hodenpyl	$22,573,800	$21,735,000	$29,771,000	$28,665,000
Tippy	$32,703,750	$30,510,000	$43,131,000	$40,238,000
Mio	$13,948,924	$15,603,750	$18,396,000	$20,579,000
Alcona	$18,312,871	$18,765,000	$24,152,000	$24,748,000
Loud	$21,373,200	$14,310,000	$28,188,000	$18,873,000
Five Channels	$21,508,200	$18,427,500	$28,366,000	$24,303,000
Cooke	$24,772,500	$19,016,100	$32,671,000	$25,079,000
Foote	$22,882,500	$25,922,250	$30,178,000	$34,187,000
Allegan (Calkins Bridge)	$9,929,250	$8,775,000	$13,095,000	$11,573,000
Webber	-	-	-	-

Note: Consumers did not prepare an evaluation of cost to upgrade or repair Hardy or Webber.

Appendix A

Table A-4. WSP Estimated Upgrade Costs

Site	Current nameplate capacity (MW)	Potential capacity after upgrade (MW)	Head (FT)	Turbine Cost in 2002 $	Turbine Cost in 2022 $ without OH[1]	Turbine Cost in 2022 $ Plus OH[2]	NOTES
Rogers	6.75	10.4	41.5	$7,727,562	$16,868,000	$22,772,000	2.6 MW Kaplan Turbine Units 1 through 4
Hardy	31.5	34.7	100.2	$12,131,389	$26,481,000	$35,748,000	Potential capacity increased was assumed to be 10%. Assumed upgrade would be from Francis to Kaplan
Croton	8.85	19.6	41.7	$14,238,365	$31,080,000	$41,958,000	Adding Kaplan unit to the Dead Bay and Units 1 and 2 have 2 Kaplans each because they each have 2 draft tubes.
Hodenpyl	17	23.3	71.6	$7,914,708	$17,277,000	$23,324,000	Upgrade to Unit 1 Kaplan unit and Unit 2 is the existing unit with upgraded 6.25 MW smaller Francis runner.
Tippy	20.1	39	47.4	$17,555,964	$38,322,000	$51,735,000	Units 1, 2, and 3 are 13 MW Kaplans
Mio	5	7.0	29.7	$5,434,649	$11,862,000	$16,014,000	3.5 MW Kaplan Turbines Units 1 and 2
Alcona	8	14.0	44.1	$7,703,249	$16,814,000	$22,698,000	7 MW Kaplan Turbine Units 1 & 2
Loud	4	4.8	27.5	$4,264,770	$9,310,000	$12,568,000	Assumed upgrade to Seagull Units 1 & 2. No Seagull unit assumptions in literature, Used Kaplan coefficients as an assumption

Appendix A

Site	Current nameplate capacity (MW)	Potential capacity after upgrade (MW)	Head (FT)	Turbine Cost in 2002 $	Turbine Cost in 2022 $ without OH[1]	Turbine Cost in 2022 $ Plus OH[2]	NOTES
Five Channels	6	7.0	35.8	$5,062,248	$11,050,000	$14,918,000	Assumed upgrade to Seagull Units 1 & 2. No Seagull unit assumptions in literature, Used Kaplan coefficients as an assumption
Cooke	9	10	39.4	$8,156,109	$17,805,000	$24,035,000	Replace Unit 1 and 2 with two dive turbines per bay and one dive turbine in the Unit 3 bay. Assumed Kaplan coefficients since no dive turbine coefficients.
Foote	9	15.9	44.9	$9,387,108	$20,491,000	$27,663,000	5.9 MW Kaplan in Unit 1, 5 MW Kaplans for Units 2 & 3
Allegan (Calkins Bridge)	2.55	2.5	16.0	$3,471,624	$7,578,000	$10,230,000	Unit 1 would be upgraded to a Kaplan and Units 2 and 3 would be overhauled. Overhaul costs not included in this table. Assumed Unit 1 increase of 10% but no total capacity increase value included as Units 2 and 3 increases are not provided.[3]
Webber	3.25	3.6	28.5	$3,403,032	$7,428,000	$10,028,000	Potential capacity increased was assumed to be 10%. Assumed upgrade would be from modified Francis and Propeller to 2 Kaplan units

Notes: [1] 2002 cost multiplied by escalation factor of 2.18284 per USCOI

[2] 2022 cost multiplied by 1.35 for 35% OH cost

[3] Allegan upgrade cost option included upgrading Unit 1 but overhauling Units 2 and 3. The equations used to calculate upgrade costs, in Table A-6, does not include unit overhaul costs. Thus, WSP assumed a 10% increase on Unit 1 (0.45 MW to 0.50 MW) for the upgrade and calculated the overhaul costs by taking a pro-rated overhaul cost (2.5 MW – 0.5 MW divided by 2.5 MW = 0.80, 0.80 multiplied by the $6,500,000 cost of the overhaul) and adding Unit 1 upgrade cost.

Table A-5. Summary of Consumers and WSP Turbine Upgrade Estimates

Site	Consumers Turbine Upgrade Cost in 2022 $	WSP Turbine Cost in 2022 $ Plus OH	Difference	Difference %
Rogers	$22,665,000	$22,772,000	-$107,000	-0.5%
Hardy	-	$35,748,000	-	-
Croton	$46,541,000	$41,958,000	$4,583,000	9.8%
Hodenpyl	$29,771,000	$23,324,000	$6,447,000	21.7%
Tippy	$43,131,000	$51,735,000	-$8,604,000	-19.9%
Mio	$18,396,000	$16,014,000	$2,382,000	12.9%
Alcona	$24,152,000	$22,698,000	$1,454,000	6.0%
Loud	$28,188,000	$12,568,000	$15,620,000	55.4%
Five Channels	$28,366,000	$14,918,000	$13,448,000	47.4%
Cooke	$32,671,000	$24,035,000	$8,636,000	26.4%
Foote	$30,178,000	$27,663,000	$2,515,000	8.3%
Allegan (Calkins Bridge)	$13,095,000	$10,230,000	$2,865,000	21.9%
Webber	-	$10,028,000	-	-

Table A-6. Cost Estimating Equations for Turbine and Generator Upgrades

Estimating Tool Application	Coefficient (A)	Exponent (B)	Exponent (C)
Francis Turbines*	3.E6	0.71	-0.42
Kaplan Turbines*	4.E6	0.72	-0.38
Bulb Turbines*	6.E6	0.86	-0.63
Generators**	3.E6	0.65	-0.38

*Turbines: Cost (2002$) = A x [Capacity (MW)]^{B} x [Head(ft)]^{C}
** Generators: Cost (2002$) = A x [Capacity (MW)]^{B} x [Speed(rpm)]^{C}

Appendix A

REFERENCES FOR APPENDIX A-1

NHA 2023. Website accessed on Feb 18, 2023, at: https://www.hydro.org/waterpower/why-hydro/affordable/ and cites a commissioned study by Navigant 2009 that is unavailable (link is broken).

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APPENDIX

A-2 WSP SURRENDER AND DECOMMISSION COSTS

Consumers Energy
Region Hydroplant
Decommissioning Cost Evaluation - Full Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Kiewit Decommissioning Cost	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 355,781	$ 340,000					Cost included in baseline studies, engineering & permitting.
Substation	Continued use of 46-kV substation	$ 59,039					$ 59,039	Utilize M&H Cost Opinion.
	Remove overhead lines between Powerhouse and MTR No. 1	$ 7,102					$ 7,102	Utilize M&H Cost Opinion.
	Wave distribution line from plant bus	$ 7,102	$ 140,000				$ 7,102	Utilize M&H Cost Opinion.
General Site	Remove security fencing	$ 4,719					$ 4,719	Utilize M&H Cost Opinion.
	Remove storage building	$ 94,462					$ 94,462	Utilize M&H Cost Opinion.
	Remove plant access road	$ 3,539					$ 3,539	Utilize M&H Cost Opinion.
	Remove septic tank / drain field	$ 11,809	$ 220,000				$ 11,809	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362						Cost included in baseline studies, engineering & permitting.
	Remove pecorniers	$ 25,980					$ 25,980	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ -					$ -	
	Survey for contaminants	$ 2,362						Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment	$ -					$ -	Utilize M&H Cost Opinion.
	Remove all powerhouse equipment	$ 191,694	$ 3,840,000				$ 191,694	Utilize M&H Cost Opinion.
	Demolish & remove powerhouse including intake/tailrace, retaining wall & apron	$ 805,328					$ 1,207,992	Utilize M&H Cost Opinion plus 50% contingency. Quantity verification needed to confirm M&H assumption.
Spillway	Modify spillway to maintain flow/pond level	-					$ -	
	Demolish and remove emergency spillway including concrete weir and apron	$ 2,148,262	$ 5,520,000				$ 2,148,262	Utilize M&H Cost Opinion.
Earth Dam and Reservoir/River Channel	Drain 449-acre reservoir	$ 957,351	$ 3,500,000				$ 957,351	Utilize M&H Cost Opinion. 30K CY riprap in erosion control measures line item utilized for temporary spillway protection.
	Demolish/remove portion of earth dam to create sufficient breach	-					$ -	
	Demolish/remove entire earth dam and core wall - excavation	$ 1,243,545		CY	$14.64	84,952	$ 1,243,545	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall - reinforced concrete demolition	$ 103,527		CY	$207.00	500	$ 103,527	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall - sheet piling removal	$ 33,032	$ 4,230,000	SF	$2.36	8,600	$ 33,032	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	$ 1,815,509		CY	$11.81	136,800	$ 1,815,509	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Reservoir Dredging	$ 16,716,595	$ 31,920,000	CY	$7.09	2,357,644	$ 16,715,696	Utilize M&H Cost Opinion for dredging of 200' wide channel.
	Remove accumulated non-contaminated sediments - Mob/Demob	$ 118,077		LS	$1.00	118,077	$ 118,077	Utilize M&H Cost Opinion.
	Remove contaminated Sediments - Removal		$ 9,530,000	CY	$7.09	54,143	$ 383,871	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Remove contaminated Sediments - Disposal		$ 75,000,000	ton	$70.00	108,285	$ 7,579,951	Disposal of contaminated sediment
	Seal former reservoir bottom	$ 625,976	$ 1,000,000					Revised cost included below.
	Habitat Restoration - Reservoir	$ -	$ 320,000					Revised cost included below.
	Apply erosion control measures - silt fence	$ 17,138		LF	$5.00	18,000	$ 90,000	Utilize M&H quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 40,929	$ 2,700,000	SF	$0.24			Cost not included. Assume jute mat on banks and straw & tackifier during seeding that is included in other items.
	Apply erosion control measures - riprap protection	$ 1,769,586		CY	$150.00	5,000	$ 750,000	Increase riprap protection costs for temporary diversion to $150/CY. Assume 5000 CY for temporary protection. Additional riprap captured in Bank Stabilization - Hard Structure & Channel Creation - Riffle Section items.
	Reuse (seeding) of non-contaminated excavated & dredged material			CY	$8.00	2,442,596	$ 19,540,768	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Bank Stabilization - Hard Structure			LF	$333.33	4,908	$ 1,635,984	Main channel = 16,360 LF. Other Tributary tie in = 3,430 LF; assume 15% hard structure banks for only main channel banks
	Bank Stabilization - Live Stakes & Jute Mat			LF	$54.53	34,872	$ 1,890,664	Main channel = 16,360 LF. Other Tributary tie in = 3,430 LF; assume 85% for main channel banks, assume all other banks
	Habitat Restoration - Seeding			Acre	$3,100.00	262	$ 813,720	Acreage outside of dredged channel, assume 300' width for main river channel, 50' width for tributary connections, include footprint of earthen dam and spillway.
	Habitat Restoration - Planting			Acre	$3,072.00	131	$ 403,185	Assume 50% of seeded area is planted, assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant; assume 50% of acreage is planted
	Channel creation - Riffle Section at downstream tie in			CY	$150.00	8,889	$ 1,333,333	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 600' length, 2' depth of riffle material.
	Salvage	$ (31,000)	$ (31,000)				$ (31,000)	Utilize M&H cost opinion
	Subtotal	**$ 25,150,240**	**$ 139,140,000**				**$ 56,650,685**	
	Contingency (20%)	$ 5,030,024.20					$ 9,893,698.33	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 3,772,536.30					$ 8,840,648.40	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting						$ 1,797,565.98	Assume 3.5% excluding sediment disposal costs
	Construction Management, Biological Monitoring & O&M						$ 1,227,180.57	Assume 2% excluding sediment disposal costs
	Total	$ 33,437,800	$ 139,140,000				**$ 78,409,400**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Relicensed Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Rogers Hydroplant
Decommissioning Cost Evaluation - Non-Power Operation

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 225,289					Cost included in baseline studies, engineering & permitting.
Substation	Continued use of 46-kV substation	$ 59,039				$ 59,039	Utilize M&H Cost Opinion.
	Remove overhead lines between Powerhouse and MTB No. 1	$ 7,102				$ 7,102	Utilize M&H Cost Opinion.
General Site	Remove storage building	$ 94,462				$ 94,462	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362					Cost included in baseline studies, engineering & permitting.
Powerhouse	Leave powerhouse intact	$ 245,565				$ 245,565	Utilize M&H Cost Opinion.
	Survey for contaminants	$ 2,362					Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment	$ 88,558				$ 88,558	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level	$ 88,667				$ 88,667	Utilize M&H Cost Opinion.
Reservoir	Fish Passage		VLF	$50,000.00	26	$ 1,300,000	Assume 42' vertical feet, downstream = 835', reservoir normal = 861'
	Salvage					$ -	Utilize M&H cost opinion
	Subtotal	**$ 813,406**				**$ 1,883,393**	
	Contingency (10%)	$ 81,340.60				$ 188,339.30	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 122,010.90				$ 282,508.95	Utilize M&H Owner's Cost
	Engineering and Permitting					$ 696,207.76	3.5% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management & Biological Monitoring (10%)					$ 188,339.30	Assume 10% of subtotal. No biological monitoring required.
	Total	**$ 1,016,758**				**$ 3,238,788**	

Consumers Energy
Rogers Hydropower
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 351,915					Cost included in baseline studies, engineering & permitting.
Substation	Continued use of 46 kV substation	$ 59,039				$ 59,039	Utilize M&H Cost Opinion.
	Remove overhead lines between Powerhouse and MTB No. 1	$ 7,102				$ 7,102	Utilize M&H Cost Opinion.
	Allow distribution line from plant bus	$ 7,102				$ 7,102	Utilize M&H Cost Opinion.
General Site	Remove security fencing	$ 4,719				$ 4,719	Utilize M&H Cost Opinion.
	Remove storage building	$ 94,462				$ 94,462	Utilize M&H Cost Opinion.
	Remove plant access road	$ 3,539				$ 3,539	Utilize M&H Cost Opinion.
	Remove septic tank / drain field	$ 11,808				$ 11,808	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362					Cost included in baseline studies, engineering & permitting.
	Remove piezometers	$ 25,980				$ 25,980	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ -				$ -	
	Survey for contaminants	$ 2,362					Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment						
	Remove all powerhouse equipment	$ 191,663				$ 191,663	Utilize M&H Cost Opinion.
	Demolish & remove powerhouse including intake/tailrace, retaining wall & aprons	$ 805,338				$ 1,207,992	Utilize M&H Cost Opinion plus 50% contingency. Quantity verification needed to confirm M&H assumptions.
Spillway	Modify spillway to maintain flow/pond level					$ -	
	Demolish and remove emergency spillway including concrete weir and apron	$ 21,822				$ 21,822	Utilize M&H Cost Opinion.
Earth Dam and Reservoir/River Channel	Drain 44B-acre reservoir	$ 496,424				$ 981,403	Utilize M&H Cost Opinion. 30K CY riprap in erosion control measures line item utilized for temporary spillway protection. Include coffer dam cost.
	Demolish/remove portion of earth dam to create sufficient breach-Excavation	$ 1,022,230	CY	$14.64	69,833	$ 1,022,355	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach-Reinforced concrete demo	$ 89,033	CY	$207.00	430	$ 89,010	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach- sheet piling removal	$ 15,572	SF	$2.36	6,600	$ 15,576	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall					$ -	
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	$ 1,615,509	CY	$11.81	136,800	$ 1,615,608	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Reservoir Dredging	$ 16,716,597		$7.09	2,002,987	$ 14,208,342	Utilize M&H Cost Opinion for dredging of 200' wide channel. Prorate at 85% of volume due to impoundment created by weir.
	Remove accumulated non-contaminated sediments - Mide/Dennis	$ 118,077		$118,077.00	1	$ 118,077	Utilize M&H Cost Opinion.
	Remove contaminated Sediments - Removal		CY	$7.09	54,143	$ 383,871	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Remove contaminated Sediments - Disposal		ton	$70.00	108,285	$ 7,579,951	Disposal of contaminated sediment. Use Kiewit unit rate.
	Seed former reservoir bottom	$ 625,976					Revised cost included below.
	Habitat Restoration						Revised cost included below.
	Apply erosion control measures - silt fence	$ 17,118	LF	$5.00	18,000	$ 90,000	Utilize M&H quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 40,929	SY	$0.24			Cost not included. Assume jute mat on banks and straw & tackifier during seeding that is included in other items.
	Apply erosion control measures - riprap protection	$ 1,765,586	CY	$150.00	5,000	$ 750,000	Riprap/engineering protection costs for temporary diversion to $150/CY. Assume 5000 CY for temporary protection. Additional riprap captured in Bank Stabilization - Hard Structure & Channel Creation - Riffle Section items.
	Reuse (grading) of non-contaminated excavated & dredged material		CY	$8.00	2,073,830	$ 16,590,641	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Bank Stabilization - Hard Structure		LF	$333.33	4,908	$ 1,635,984	Main channel = 16,360 LF, Other Tributary tie in = 3,430 LF; assume 15% hard structure banks for only main channel banks.
	Bank Stabilization - Live Stakes & Jute Mat		LF	$54.53	34,672	$ 1,890,664	Main channel = 16,360 LF, Other Tributary tie in = 3,430 LF; assume 85% for main channel banks, assume all other banks
	Habitat Restoration - Seeding		Acre	$3,100.00	225	$ 697,500	Acreage outside of dredged channel, assume 200' width for main river channel, 50' width for tributary connections. Include footprint of earthen dam and spillway
	Habitat Restoration - Planting		Acre	$3,072.00	113	$ 345,600	Assume 50% of seeded area is planted, assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.45/plant; assume 50% of acreage is planted
	Concrete weir installation		LF	$5,050.00	200	$ 1,010,000	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $700/CY. Pile cost included.
	Fish Passage		VLF	$50,000.00	9	$ 450,000	Assume 8 FT drop from weir + 3 FT below downstream water elevation.
	Channel creation - Riffle Section at downstream tie in		CY	$150.00	4,444	$ 666,667	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 300' length, 2' depth of riffle material.
	Salvage	$ (31,000)				$ (31,000)	Utilize M&H cost opinion
	Subtotal	**$ 22,326,729**				**$ 51,745,480**	
	Contingency (10%)	$ 2,232,673.00				$ 5,174,548.01	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 3,345,893.85				$ 7,761,822.22	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting					$ 1,945,793.45	Assume 3.5% excluding sediment disposal costs, add 200k for concrete weir design
	Construction Management, Biological Monitoring & O&M					$ 883,519.54	Assume 3% excluding sediment disposal costs
	Total	$ 27,882,174				**$ 67,510,964**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Meade & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost databases. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Hardy Hydroplant
Decommissioning Cost Evaluation - Full Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Kiewit Decommissioning Cost	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 2,105,600	$ 2,100,000					Cost included in baseline studies, engineering & permitting.
Substation	Remove transformer & lines from powerhouse to 186kV	$ 115,858	$ 100,000				$ 115,858	Utilize M&H Cost Opinion.
General Site	Remove security fencing	$ 14,157	$ 600,000				$ 14,157	Utilize M&H Cost Opinion.
	Remove plant access road	$ 374,562					$ 374,562	Utilize M&H Cost Opinion.
	Remove septic tank / drain field	$ 11,808					$ 11,808	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362						Cost included in baseline studies, engineering & permitting.
	Remove piezometers	$ 172,415					$ 172,415	Utilize M&H Cost Opinion.
Intake Structure	Demolish & remove intake structure & footbridge	$ 2,582,603	$ 2,600,000				$ 2,582,603	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ -	$ 4,100,000				$ -	
	Survey for contaminants	$ 2,362						Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment						$ -	
	Remove all powerhouse equipment	$ 387,618					$ 387,618	Utilize M&H Cost Opinion.
	Demolish & remove powerhouse including spill tubes, intake/tailrace, retaining wall & apron	$ 3,739,631					$ 3,739,631	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level						$ -	
	Demolish and remove emergency spillway	$ 1,756,585					$ 1,756,585	Utilize M&H Cost Opinion.
	Partial Spillway Scope		$ 14,000,000					
	Spillway: concrete demolition, removal and disposal		$ 1,500,000					Kiewit cost not included. Assume concrete volume captured in M&H item for earthen dam, core wall & emergency spillway accounts for this.
	Spillway: Site restoration, planting, seeding		$ 1,500,000				$ -	Kiewet cost not included. Included in WSP planting/seeding costs.
Earth Dam and Reservoir/River Channel	Drain 3,902-acre reservoir	$ 392,400	$ 400,000				$ 392,400	Utilize M&H Cost Opinion.
	Construction of temporary spillway for drawdown		$ 11,000,000					Kiewit cost not included. Costs included for temporary riprap protection and channel riffle material below. Unit rate increased to $150/CY.
	Demolish/remove portion of earth dam to create sufficient breach						$ -	
	Reconstruct roadway - Road	$ 779,306	$ 14,000,000				$ 779,306	Kiewit roadway reconstruction costs not included. Assume bridge costs contain necessary superstructure to set deck at sufficient elevation to reduce sleep slope that requires roadway realignment. Contingent on additional studies.
	Reconstruct roadway - Bridge	$ 6,280,000	$ 25,000,000	SF	$ 330	24,500	$ 12,127,500	M&H Estimate revised per 2022 MDOT cost spreadsheet. New Bridge = $330/SF. Include 50% contingency.
	Demolish/remove entire earth dam, core wall and emergency spillway - excavation	$ 20,823,436	$ 23,400,000	CY	$14.64	1,422,540	$ 20,823,436	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam, core wall and emergency spillway - reinforced concrete demo	$ 2,174,063		CY			$ 2,174,063	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam, core wall and emergency spillway - sheet piling removal	$ 419,982		SF			$ 419,982	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	$ 1,681,641	$ 18,000,000	CY	$11.81	142,400	$ 1,681,744	Utilize M&H Cost Opinion
	Remove accumulated non-contaminated sediments - Reservoir Dredging	$ 7,433,606		CY	$7.09	1,348,407	$ 9,560,206	Assumes dredging 300' wide main channel is re-established with limited dredging. Assume 1048407 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel where required. Secondary tributary connections = 36,000LF, assume 50' width dredged, 4' depth avg = 300,000 CY .
	Remove accumulated non-contaminated sediments - Mob/Demob	$ 354,231		LS	$118,077.00	3	$ 354,231	Utilize M&H Cost Opinion
	Remove contaminated Sediments - Removal			CY	$7.09	629,523	$ 4,463,316	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Remove contaminated Sediments - Disposal		$ 150,000,000	ton	$70.00	1,259,045	$ 88,133,173	Disposal of contaminated sediment; Kiewit unit rate.
	Seed former reservoir bottom	$ 5,915,473	$ 5,900,000					Revised cost included below.
	Apply erosion control measures - silt fence	$ 95,100	$ 2,200,000	LF	$5.00	100,000	$ 500,000	Utilize M&H quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 385,216		SY	$0.24	1,600,000		Cost not included. Assume jute mat on banks and straw & tackifier during seeding that is included in other items.
	Apply erosion control measures - riprap protection	$ 1,769,586		CY	$150.00	5,000	$ 750,000	Increase riprap protection costs for temporary diversion to $150/CY. Assume 5000 CY for temporary protection. Additional riprap captured in Bank Stabilization - Hard Structure & Channel Creation - Riffle Section items.
	Reuse (grading) of non-contaminated excavated & dredged material			CY	$8.00	2,913,347	$ 23,306,776	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments			Acre	$6,700.00	2,877	$ 19,276,996	Grading and reworking of newly exposed sediments within reservoir.
	Bank Stabilization - Hard Structure		$ 65,000,000	LF	$333.33	26,760	$ 8,919,911	Main channel = 89,200 LF, Other Tributary tie in = 36,000 LF; assume 15% hard structure banks for only main channel banks
	Bank Stabilization - Live Stakes & Jute Mat			LF	$54.53	223,640	$ 12,195,089	Main channel = 89,200 LF, Other Tributary tie in = 36,000 LF; assume 85% for main channel banks, assume all other banks
	Habitat Restoration - Seeding			Acre	$3,100.00	2,877	$ 8,919,207	Acreage outside of dredged channel, assume 300' width for main river channel, 50' width for tributary connections, include footprint of earthen dam and spillway
	Habitat Restoration - Planting			Acre	$3,072.00	1,707	$ 5,243,604	Assume full planting in channel floodplain for riparian buffer, assume 50% planting in newly created upland outside floodplain. assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant; assume 50% of acreage is planted.
	Channel creation - Riffle Section at downstream tie in			CY	$186.00	22,222	$ 4,133,333	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 300' width, 1000' length, 2' depth of riffle material.
	Salvage	$ (135,398)					$ (135,398)	Utilize M&H cost opinion
	Subtotal	**$ 59,634,203**	**$ 341,400,000**				**$ 233,174,112**	
	Contingency (10%)	$ 5,963,420.30					$ 23,317,411.19	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 8,945,130.45					$ 34,976,116.79	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting						$ 5,076,432.85	Assume 3.5% excluding sediment disposal costs
	Construction Management, Biological Monitoring & O&M						$ 2,900,818.77	Assume 2% excluding sediment disposal costs
	Total	$ 74,542,754	$ 341,400,000				**$ 299,444,891**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost

Consumers Energy
Hardy Hydroplant
Decommissioning Cost Evaluation - Non-Power Operation

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 796,680					Cost included in baseline studies, engineering & permitting.
General Site	Survey site for environmental contamination	$ 2,362					Cost included in baseline studies, engineering & permitting.
Powerhouse	Leave powerhouse intact	$ 239,902				$ 239,902	
	Survey for contaminants	$ 2,362					Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment	$ 88,558				$ 88,558	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level	$ 88,558				$ 88,558	Utilize M&H Cost Opinion.
Reservoir	Fish Passage		VLF	$50,000.00	95	$ 4,750,000	Assume 95' vertical feet, downstream = 727', reservoir normal = 822'
	Subtotal	**$ 1,218,422**				**$ 5,167,018**	
	Contingency (10%)	$ 121,842.20				$ 516,701.80	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 182,763.30				$ 775,052.70	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting					$ 1,382,525.63	5.5% =Impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management & Biological Monitoring					$ 516,701.80	Assume 10% of subtotal. No biological monitoring required.
	Total	**$ 1,523,026**				**$ 8,358,000**	

Consumers Energy
Hardy Hydrojoint
Decommissioning Cost Formulation - Partial Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Kiewit Decommissioning Cost	Unit	MSP Unit Cost	Quantity	MSP Opinion of Cost	MSP Notes
Impact Study	Environmental/Social Impact Study	$ 3,071,520	$ 3,100,000					Cost included in baseline studies, engineering & permitting.
Fabrication	Remove transformer & other high power/house to 169kV	$ 113,952	$ 200,000				$ 113,952	Utilize M&H Cost Opinion.
	Remove security fencing	$ 14,157					$ 14,157	Utilize M&H Cost Opinion.
General Site	Remove power delivery wire	$ 374,562					$ 374,562	Utilize M&H Cost Opinion.
	Remove maple, bank / drain field	$ 11,809	$ 600,000				$ 11,809	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362					$ 2,362	Utilize M&H Cost Opinion.
	Remove gravel roads	$ 1,181					$ 1,181	Utilize M&H Cost Opinion.
Intake Structure	Demolish & remove intake structure & footbridge	$ 2,660,662	$ 2,000,000				$ 2,660,662	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ -					$ -	
	Survey for comments/permits	$ 2,953					$ -	Cost included in baseline studies, engineering & permitting.
	Remove or lay-up equipment	$ -	$ 4,130,000				$ -	
	Demolish & remove powerhouse	$ 387,618					$ 387,618	Utilize M&H Cost Opinion.
	Demolish & remove powerhouse including spill turbert, intake/sluice, retaining wall & apron	$ 3,739,631					$ 3,739,631	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level						$ -	-
	Demolish and remove emergency spillway						$ -	-
	Partial Spillway Scope		$ 14,000,000				$ -	-
								Kiewit cost not included. Assume concrete cutting required to install dam for earthen dam to remain in place, emergency spillway and bridge for now.
	Spillway: concrete demolition, removal and disposal		$ 1,500,000					Kiewit cost not included. Included in MSP planting/seeding costs.
	Spillway: site restoration, planting, seeding		$ 1,500,000				$ -	
	Drain 3,962-acre reservoir	$ 392,400	$ 400,000				$ 392,400	Utilize M&H Cost Opinion.
	Construction of temporary spillway for drawdown		$ 11,000,000					Kiewit cost not included. Costs included for temporary riprap protection and channel. Riffle material below. Unit rate increased to $150/CY.
	Demolish/remove portion of earth dam to create sufficient breach - Excavation	$ 16,499,160		CY	$14.64	1,140,000	$ 16,689,600	Utilize M&H unit cost. No Kiewit estimate for partial removal. Assume 2:1 slope from top of weir to top of existing earth dam embankment.
	Demolish/remove portion of earth dam to create sufficient breach - Reinforced concrete dams	$ 776,452		CY	$307.00	2,750	$ 726,250	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach - Sheet	$ 113,254		SF	$2.30	49,000	$ 112,700	Utilize M&H Cost Opinion.
Earth Dam and Reservoir/River Channel	Reconstruct roadway - flood	$ 779,306	$ 14,000,000				$ 779,306	Kiewit roadway reconstruction costs not included. Assume bridge costs contain necessary superstructure to set deck at sufficient elevation to reduce steep slope that require roadway realignment.
	Reconstruct roadway - Bridge	$ 6,260,000	$ 25,000,000	SF	$330.00	24,500	$ 12,127,000	Kiewit estimate revised per 2022 MDOT cost spreadsheet. New bridge + approx. 1,000 LF roadway.
	Demolish/remove entire earth dam, core wall and emergency spillway			CY	$14.64	1,140,000	$ 16,689,600	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Sehl-Pilot Channel	$ 1,681,641		CY	$11.81	142,400	$ 1,681,744	Utilize M&H Cost Opinion.
	Remove accumulated non-contaminated sediments - Reservoir Dredging	$ 7,433,606	$ 18,000,000	CY	$7.08	1,191,148	$ 8,445,225	Assumes dredging 100' wide main channel is re-established with limited dredging. Assume 1064647 CY (from M&H options) required to remove fine grain sediments and re-establish channel where required. Prorate at 85% to account for no dredging in areas where channel naturally forms. Assuming connectivity = 84,000LF, assume 50' width dredged, of depth avg = 283,950 CY.
	Remove accumulated non-contaminated sediments - Weir/Sediment	$ 267,915		CY	$139,077.36	2	$ 267,915	Utilize M&H Cost Opinion.
	Remove contaminated Sediments - Removal			CY	$7.08	629,523	$ 4,463,249	Assume 30% of reservoir requires dredging at average depth of 14' prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Remove contaminated Sediments - Disposal		$ 100,000,000	tons	$70.00	1,358,340	$ 95,113,172	Disposal of contaminated sediment
	Erosion control measures	$ 9,915,470	$ 4,000,000	LF				Kiewit cost not included.
	Apply erosion control measures - silt fence	$ 661,031		LF	$5.00	132,000	$ 660,000	Utilize M&H Cost Opinion. Assume quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 385,216	$ 2,200,000	SF	$0.24	1,600,000		Cost not included. Assume jute mat on banks and below & shoreline stating seeding that is included in other items.
	Apply erosion control measures - riprap protection	$ 1,769,586		CY	$150.00	5,000	$ 750,000	Increase riprap protection costs for temporary diversion to 3,000CY. Assume 2,000 CY for temporary protection. Additional riprap captured in Site Stabilization - Hard Structure & Channel Creation - Riffle Section Items
	Reuse (grading) of non-contaminated excavated & dredged material			CY	$8.00	2,473,546	$ 19,788,368	Grading and reworking of newly exposed sediments within reservoir.
	Grading & surface preparation/amendments			Acre	$6,700.00	2,603	$ 18,760,100	Main channel = 84,000 LF x 200ft = 16,800,000 SF = 385AC. Assume 15% hard structure banks for only main channel banks
	Bank Stabilization - Hard Structure			LF	$333.33	26,760	$ 8,919,911	Main channel banks = 84,000 LF. Tributaries = 26,000 LF, assume non-hard structure banks.
	Bank Stabilization - Live Stakes & Jute Mat			LF	$54.53	223,646	$ 12,195,084	Main channel banks, assume all other banks
	Habitat Restoration - Seeding		$ 65,000,000	Acre	$3,100.00	2,603	$ 8,069,300	Acreage outside of dredged channel, assume 300' width for main river channel, 50' width for tributary connections. Include footprint of earthen dam and spillway.
	Habitat Restoration - Planting			Acre	$3,072.00	1,402	$ 4,305,456	Assume full planting in channel floodplain for riparian buffer, assume 50% planting in newly created upland outside floodplain, assume 10' OC spacing, 490 plants per acre, 42 creosote x 2" high, 56 dogbane, assume 50% of acreage is planted
	Channel creation - Riffle Section at downstream tie in			CY	$150.00	11,111	$ 1,666,667	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 600' length, 2' depth of riffle material
	Concrete Weir Installation			LF	$5,050.00	300	$ 1,515,000	Assume weir taken at a skip height of 10' (top height = 7' freeboard + 3' head). Assume reinforced marine concrete has a unit cost of $7561/CY. Pile cost included.
	Fish Passage			Vol	$50,000.00	9	$ 450,000	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
	Salvage	$ (125,000)					$ (125,000)	Utilize M&H cost opinion
	Subtotal	$ 51,863,350	$ 310,230,000				$ 218,791,481	
	Contingency (10%)	$ 5,186,335					$ 21,879,148	Utilize M&H Contingency for comparison
	Kiewit Profit (10%)	$ 7,780,005					$ 32,818,722	Utilize M&H Contingency for comparison
	Baseline Studies, Engineering and Permitting						$ 4,972,000	Assume 2% excluding sediment disposal costs plus local for concrete sales and sewage design
	Construction Management, Ecological Monitoring & O&M						$ 7,812,000	Assume 2% excluding sediment disposal costs
	TOTAL	$ 64,829,690	$ 310,230,000				$ 286,394,351	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Meade & Hunt Removal Estimate includes $2,000,000 for Sediment Disposal. Kiewit Estimate includes exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. MSP unit costs based on Meade & Hunt Refinement Studies, Kiewit Infrastructure Co, Cost Estimates and MSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Full Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 781,416					Costs included in Engineer baseline studies
Substation	Remove power cable between powerhouse and MTB No. 1	$ 71,024				$ 71,024	Utilize M&H Cost Opinion.
General Site	Remove security fencing	$ 3,067				$ 3,067	Utilize M&H Cost Opinion.
	Remove storage building	$ 10,000				$ 10,000	Utilize M&H Cost Opinion.
	Remove office/storage building	$ 94,462				$ 94,462	Utilize M&H Cost Opinion.
	Remove plant access road	$ 5,899				$ 5,899	Utilize M&H Cost Opinion.
	Remove septic tank / drain field	$ 11,808				$ 11,808	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,362					Costs included in Engineer baseline studies
	Remove piezometers	$ 18,895				$ 18,895	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ -				$ -	
	Survey for contaminants	$ 2,362					Costs included in Engineer baseline studies
	Remove all powerhouse equipment	$ 265,954				$ 265,954	Utilize M&H Cost Opinion.
	Demolish and remove powerhouse turbine bay including intake/tailrace, retaining walls, and aprons	$ 1,093,075				$ 1,093,075	Utilize M&H Cost Opinion.
	Demolish and remove powerhouse generator hall	$ 1,113,948				$ 1,113,948	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level					$ -	
	Demolish and remove spillway including concrete weir and apron.	$ 2,935,154				$ 2,935,154	Utilize M&H Cost Opinion.
Earth Dam and Reservoir/River Channel	Drain 1,209-acre reservoir	$ 1,170,076				$ 1,170,076	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach					$ -	
	Demolish/remove entire earth dam and core wall - excavation	$ 483,061	CY	$14.64	33,000	$ 483,061	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall - reinforced concrete demo	$ 103,527	CY	$207.00	500	$ 103,527	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall - sheet piling removal	$ 9,202	SF	$2.36	3,900	$ 9,202	Utilize M&H Cost Opinion.
	Remove accumulated sediments (non-contaminated) - river pilot channel	$ 1,617,517	CY	$11.81	136,970	$ 1,617,616	Utilize M&H Cost Opinion.
	Remove accumulated sediments (non-contaminated) - reservoir dredging	$ 27,277,139	CY	$7.09	3,847,062	$ 27,275,670	Assumes dredging 300' wide channel. Utilize M&H quantity. Assume this includes connection to Little Muskegon River.
	Remove accumulated sediments (non-contaminated) - Mob/Demob	$ 236,154	LS	$118,077.00	2	$ 236,154	Utilize M&H Cost Opinion.
	Seed former reservoir bottom	$ 1,658,836					M&H Item - WSP costs revised in line item below.
	Apply erosion control measures - silt fence	$ 18,069	LF	$5.00	19,000	$ 95,000	Utilize M&H quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 108,342	SY	$0.24	450,000		M&H cost not included. Assume jute mat on banks and straw & tackifier during seeding that is included in other items.
	Apply erosion control measures - riprap protection	$ 1,769,586	CY	$150.00	5,000	$ 750,000	Increase riprap protection costs for temporary diversion to $150/CY. Assume 5000 CY for temporary protection. Additional riprap captured in Bank Stabilization - Hard Structure & Channel Creation - Riffle Section items.
	Contaminated Sediment Dredging		CY	$7.09	195,052	$ 1,382,919	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Contaminated Sediment Disposal		Ton	$70.00	390,104	$ 27,307,280	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Reuse (grading) of non-contaminated excavated & dredged material		CY	$8.00	3,880,062	$ 31,040,496	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading and surface preparation amendments		ACRE	$6,700.00	957	$ 6,411,900	Grading and reworking of newly exposed sediments within reservoir.
	Bank Stabilization - Hard Structure		LF	$333.33	6,420	$ 2,139,979	Main channel = 21,400 LF, Tributary Tie in to Little Muskegon River = 7,535; Other Tributary tie in = 1,135 LF; assume 15% hard structure banks for only main channel banks.
	Bank Stabilization - Live Stakes & Jute Mat		LF	$54.53	53,720	$ 2,929,352	Main channel = 21,400 LF, Tributary Tie in to Little Muskegon River = 7,535; Other Tributary tie in = 1,135 LF; assume 85% for main channel banks and 100% of tributary banks.
	Habitat Restoration - Seeding		Acre	$3,100.00	957	$ 2,966,700	Acreage outside of dredged channel, assume 300' width for main river channel, assume 200' channel width for Little Muskegon River tie in, assume 100' width for other tributary connections. Assume all is seeded.
	Habitat Restoration - Planting		Acre	$3,072.00	479	$ 1,469,952	Acreage outside of dredged channel, assume 300' width for main river channel, assume 200' channel width for Little Muskegon River tie in, assume 100' width for other tributary connections. assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant; assume 50% of acreage is planted
	Channel creation - Riffle Section at downstream tie in		CY	$186.00	13,333	$ 2,480,000	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 300' width, 600' length, 2' depth of riffle material.
	Sea Lamprey Control Structure		LS	$1,500,000.00	1	$ 1,500,000	Assume same costs as concrete weir in partial removal option.
	Salvage	$ (47,350)				$ (47,350)	Utilize M&H cost opinion
	Subtotal	**$ 40,860,935**				**$ 116,944,818**	
	Contingency (10%)	$ 4,086,093.50				$ 11,694,481.82	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 6,129,140.25				$ 17,541,722.72	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting (4%)					$ 3,137,313.84	Assume 3.5% excluding sediment disposal costs
	Construction Management, Biological Monitoring, O&M (3%)					$ 1,792,750.76	Assume 2% excluding sediment disposal costs
	Total	**$ 51,028,819**				**$ 151,111,087**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Non-Power Surrender

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 351,752					Costs included in Engineer baseline studies
General Site	Remove office/storage building	$ 94,462				$ 94,462	Utilize M&H Cost Opinion.
Powerhouse	Leave powerhouse intact	$ 203,198				$ 203,198	Utilize M&H Cost Opinion.
	Survey for contaminants	$ 2,362					Costs included in Engineer baseline studies
	Remove of lay-up equipment	$ 88,558				$ 88,558	Utilize M&H Cost Opinion.
Spillway	Modify spillway to maintain flow/pond level	$ 88,558				$ 88,558	Utilize M&H Cost Opinion.
	Fish Passage		VF	$50,000.00	42	$ 2,100,000	Assume 42' vertical feet, downstream = 680', crest elevation = 722'
	Subtotal	**$ 831,252**				**$ 2,574,776**	
	Contingency (10%)	$ 83,125.20				$ 257,477.60	Assume 10%
	Owner's Cost (15%)	$ 124,687.80				$ 386,216.40	Utilize M&H Owner's Cost (15%)
	Baseline Studies, Engineering and Permitting					$ 846,869.16	3.5% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management & O&M (10%)					$ 257,477.60	Assume 10% of subtotal. No biological monitoring required.
	Total	**$ 1,039,065**				**$ 4,322,817**	

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Meade & Hunt Decommissioning Cost	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 771,005					Costs included in Engineer baseline studies
Substation	Remove power cable between powerhouse and MTB No. 1	$ 71,024				$ 71,024	Utilize M&H Cost Opinion.
General Site	Remove security fencing	$ 3,067				$ 3,067	Utilize M&H Cost Opinion.
	Remove storage building	$ 10,000				$ 10,000	Utilize M&H Cost Opinion.
	Remove office/storage building	$ 94,462				$ 94,462	Utilize M&H Cost Opinion.
	Remove plant access road	$ 5,899				$ 5,899	Utilize M&H Cost Opinion.
	Remove septic tank / drain field	$ 11,808				$ 11,808	Utilize M&H Cost Opinion.
	Survey site for environmental contamination	$ 2,382				-	Costs included in Engineer baseline studies
Powerhouse	Remove piezometers	$ 18,895				$ 18,895	Utilize M&H Cost Opinion.
	Leave powerhouse intact	$ -				$ -	
	Survey for contaminants	$ 2,382				-	Costs included in Engineer baseline studies
	Remove all powerhouse equipment	$ 265,954				$ 265,954	Utilize M&H Cost Opinion.
	Demolish and remove powerhouse turbine bay including intake/tailrace, retaining walls, and aprons	$ 1,003,075				$ 1,003,075	Utilize M&H Cost Opinion.
Spillway	Demolish and remove powerhouse generator hall					$ -	
	Modify spillway to maintain flow/pond level					$ -	
	Demolish and remove spillway including concrete weir and apron.	$ 2,935,154				$ 2,935,154	Utilize M&H Cost Opinion.
Earth Dam and Reservoir/River Channel	Drain 1,209-acre reservoir	$ 1,170,076				$ 1,170,076	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach - Excavation	$ 498,139	CY	$14.64	34,030	$ 498,109	Assume same quantity & unit rate as M&H
	Demolish/remove portion of earth dam to create sufficient breach - Reinforced concrete demo	$ 102,492	CY	$207.00	495	$ 102,465	Utilize M&H Cost Opinion.
	Demolish/remove portion of earth dam to create sufficient breach - sheet piling removal	$ 7,786	SF	$2.36	3,300	$ 7,788	Utilize M&H Cost Opinion.
	Demolish/remove entire earth dam and core wall					$ -	
	Remove accumulated sediments (non-contaminated) - river pilot channel	$ 1,617,517	CY	$11.81	136,970	$ 1,617,616	Utilize M&H Cost Opinion.
	Remove accumulated sediments (non-contaminated) - reservoir dredging	$ 27,277,139	CY	$7.09	3,270,003	$ 23,184,319	Assumes dredging 50 acre channel. Utilize M&H quantity. Assume this includes connection to Little Muskegon River. Prorate at 85% to account for impoundment section not requiring dredging.
	Remove accumulated sediments (non-contaminated) - Mob/Demob	$ 236,154	LS	$118,077.00	2	$ 236,154	Utilize M&H Cost Opinion.
	Seed former reservoir bottom	$ 1,658,819					Revised cost included below.
	Apply erosion control measures - silt fence	$ 18,069	LF	$5.00	19,000	$ 95,000	Utilize M&H quantity. Adjust unit price based on similar projects.
	Apply erosion control measures - erosion mat	$ 108,342	SY	$0.24	450,000		M&H Cost not included. Assume jute mat on banks and straw & tackifier during seeding is included in other items below.
	Apply erosion control measures - riprap protection	$ 1,769,586	CY	$150.00	5,000	$ 750,000	Increase riprap protection costs for temporary diversion to $150/CY. Assume 5000 CY for temporary protection. Additional riprap captured in Bank Stabilization - Hard Structure & Channel Creation - Riffle Section items.
	Contaminated Sediment Dredging		CY	$7.09	195,052	$ 1,382,919	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
	Contaminated Sediment Disposal		Ton	$70.00	390,104	$ 27,307,280	Unit cost from Kiewit estimate
	Reuse (grading) of non-contaminated excavated & dredged material		CY	$9.00	3,304,033	$ 26,432,262	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading and surface preparation amendments		ACRE	$6,700.00	700	$ 4,690,000	Grading and reworking of newly exposed sediments within reservoir.
	Bank Stabilization - Hard Structure		LF	$333.33	6,420	$ 2,139,979	Main channel = 21,400 LF, Tributary Tie in to Little Muskegon River = 7,535; Other Tributary tie in = 1,135 LF; assume 15% hard structure banks for only main channel banks
	Bank Stabilization - Live Stakes & Jute Mat		LF	$54.53	53,720	$ 2,929,352	Main channel = 21,400 LF, Tributary Tie in to Little Muskegon River = 7,535; Other Tributary tie in = 1,135 LF; assume 85% for main channel banks, assume all other banks
	Habitat Restoration - Seeding		Acre	$3,100.00	929	$ 2,881,165	Acreage outside of dredged channels and impoundment preserved by weir, assume 350' width for main river channel, assume 200' channel width for Little Muskegon River tie in, assume 100' width for other tributary connections. Assume all is seeded.
	Habitat Restoration - Planting		Acre	$3,072.00	465	$ 1,427,573	Acreage outside of dredged channels and impoundment preserved by weir, assume 350' width for main river channel, assume 200' channel width for Little Muskegon River tie in, assume 100' width for other tributary connections. assume 10' OC spacing, 48 plants per acre, #2 container 1-2' high, $6.40/plant; assume 50% of acreage is planted
	Channel creation - Riffle Section at downstream tie in		CY	$150.00	6,667	$ 1,000,000	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 300' width, 300' length, 2' depth of riffle material.
	Fish Passage w/ sea lamprey control		VLF	$50,000.00	9	$ 450,000	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
	Concrete Weir Installation		LF	$5,050.00	300	$ 1,515,000	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Salvage	$ (47,350)				$ (47,350)	Utilize M&H cost opinion
	Subtotal	**$ 39,749,202**				**$ 104,279,337**	
	Contingency (10%)	$ 3,974,920.20				$ 10,427,933.72	Utilize M&H Contingency for comparison
	Owner's Cost (15%)	$ 5,962,380.30				$ 15,641,870.58	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting					$ 3,094,015.00	Assume 3.5% excluding sediment disposal costs plus 400k for concrete weir/fish passage design
	Construction Management & Biological Monitoring					$ 1,539,457.14	Assume 2% excluding sediment disposal costs
	Total	**$ 49,639,153**				**$ 134,982,374**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation – Full Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	WSP Unit Cost	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Replace 46/138kV substation	$ 3,182,177.00		LS	1	$ 3,182,177.00	Utilize Mead & Hunt opinion
	Remove power lines between powerhouse and substation	$ 28,410.00		LF	400	$ 28,410.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 21,235.00		LF	9,000	$ 21,235.00	Utilize Mead & Hunt opinion
	Remove plant access road	$ 32,442.00		LF	5,500	$ 32,442.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00		LS	1	$ 11,808.00	Utilize Mead & Hunt opinion
	Remove downstream Soil Nail Wall	$ 46,587.00	$ 400.00	CY	225	$ 90,000.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove piezometers	$ 82,865.00		EACH	35	$ 82,865.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 339,686.00		LS	1	$ 339,686.00	Utilize Mead & Hunt opinion
	Remove garage	$ 7,223.00		LS	1	$ 7,223.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 5,985,920.00	$ 207.00	CY	28,910	$ 5,984,370.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 6,284.00		TON	20	$ 6,284.00	Utilize Mead & Hunt opinion
	Remove valves	$ 1,257.00		TON	4	$ 1,257.00	Utilize Mead & Hunt opinion
	Remove sheet piling	$ 58,986.00	$ 2.36	SF	25,000	$ 59,000.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove intake wall/walkway	$ 3,456.00		TON	11	$ 3,456.00	Utilize Mead & Hunt opinion
	Remove hoist rail	$ 1,257.00		TON	4	$ 1,257.00	Utilize Mead & Hunt opinion
	Remove gates	$ 15,710.00		TON	50	$ 15,710.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Dram 1,798-acre reservoir	$ 617,725.00		LS	1	$ 617,725.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 11,198,229.00	$ 14.64	CY	765,000	$ 11,199,600.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Reinforced concrete demolition	$ 2,120,229.00	$ 207.00	CY	10,240	$ 2,119,680.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Sheet piling removal	$ 238,304.00	$ 2.36	SF	101,000	$ 238,360.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Dam pilot channel	$ 1,662,050.00	$ 8.00	CY	140,741	$ 1,125,928.00	Unit cost obtained from comparable WSP projects
	Remove accumulated non-contaminated sediments	$ 38,958,990.00	$ 7.00	CY	5,545,885	$ 39,320,324.65	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 5,494,625 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections = 6,920 LF, assume 50' width dredged, 4' depth avg = 51,260 CY
	Mobilization/demobilization	$ 236,154.00	$ 118,077.00	LS	2	$ 236,154.00	Utilize Mead & Hunt opinion
	Reusel/grading of non-contaminated excavated and dredged material	$ -	$ 8.00	CY	6,461,626	$ 51,613,008.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading and surface preparation/amendments	$ -	$ 6,700.00	ACRE	1,581	$ 10,592,700.00	Grading and reworking of newly exposed sediments within reservoir.
	Seed former reservoir bottom	$ 1,877,926.00	$ 3,100.00	ACRE	1,581	$ 4,901,100.00	Seeding of newly exposed reservoir bottom.
	Plant former reservoir bottom	$ -	$ 3,072.00	ACRE	1,581	$ 4,856,832.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant
	Apply Erosion Control Measures: Silt Fence	$ 26,628.00	$ 5.00	LF	28,000	$ 140,000.00	Unit cost adjusted per similar projects.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5,000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Bank Stabilization - Hard Structure	$ -	$ 333.33	LF	18,243	$ 6,080,872.52	Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness OSO = 15" riprap, 2.22 CY/LF from M&H, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ 161,309.00	$ 54.53	LF	72,971	$ 3,979,119.54	Assume 3H:1V, assume 3' bank (1 5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per 5', add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Channel creation - riffle section at downstream tie-in	$ -	$ 150.00	CY	14,815	$ 2,222,250.00	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width; 1000' length; 2' depth of riffle material.
	Salvage Value	$ (57,430.00)	$ (57,430.00)	LS	1	$ (57,430.00)	Utilize Mead & Hunt opinion
	Subtotal	**$65,313,253**				**$146,679,457**	
	Contingency					$14,667,945.67	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$22,001,768.51	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
	Engineering and Permitting					$5,133,745.98	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal.
	Construction Management & Biological Monitoring					$2,933,569.13	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$191,415,386**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation - Non-Power Operation

Structure	Scope Item	Mead & Hunt Estimate Decomissioing Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Powerhouse	Leave powerhouse intact	$ 94,463.00		LS		$ 94,463.00	Utilize Mead & Hunt opinion
	Remove or lay up equipment	$ 88,384.00		LS		$ 88,384.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates	Modify spillway to maintain flow/pond level	$ 88,558.00		CY	1560	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Installation of fish passage	$ -	$ 50,000.00	VLF	79	$ 3,950,000.00	Assume $50,000 / VF. Extend 3' into downstream tie in.
	Subtotal	**$176,942**				**$4,126,942**	
	Contingency					$412,694.20	Assume 10% of subtoal.
	Owner's Cost					$619,041.30	Assume 15% of subtoal.
	Engineering and Permitting					$1,001,683.97	15% *impact study=$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management					$412,694.20	Assume 10% of subtotal. No biological monitoring required.
	Total					**$6,573,056**	

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	WSP Unit Cost	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Replace 46/138kV substation	$ 3,182,177.00		LS	1	$ 3,182,177.00	Utilize Mead & Hunt opinion
	Remove power lines between powerhouse and substation	$ 28,410.00		LF	400	$ 28,410.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 21,235.00		LF	9000	$ 21,235.00	Utilize Mead & Hunt opinion
	Remove plant access road	$ 32,442.00		LF	5500	$ 32,442.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00		LS	1	$ 11,808.00	Utilize Mead & Hunt opinion
	Remove piezometers	$ 82,665.00		EACH	35	$ 82,665.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 339,686.00		LS	1	$ 339,686.00	Utilize Mead & Hunt opinion
	Remove garage	$ 7,223.00		LS	1	$ 7,223.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 5,985,920.00	$ 207.00	CY	28910	$ 5,984,370.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 6,284.00		TON	20	$ 6,284.00	Utilize Mead & Hunt opinion
	Remove valves	$ 1,257.00		TON	4	$ 1,257.00	Utilize Mead & Hunt opinion
	Remove sheet piling	$ 58,986.00	$ 2.36	SF	25000	$ 59,000.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove intake wall/walkway	$ 3,456.00		TON	11	$ 3,456.00	Utilize Mead & Hunt opinion
	Remove hoist rail	$ 1,257.00		TON	4	$ 1,257.00	Utilize Mead & Hunt opinion
	Remove gates	$ 15,710.00		TON	50	$ 15,710.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Drain 1,798-acre reservoir	$ 617,725.00		LS	1	$ 617,725.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 4,684,227.00	$ 14.64	CY	204020	$ 2,986,852.80	Unit cost obtained from Hardy Dam Kiewit estimate
	Reinforced concrete demolition	$ 1,718,545.00	$ 207.00	CY	2734	$ 565,954.56	Unit cost obtained from Hardy Dam Kiewit estimate
	Sheet piling removal	$ 21,707.00	$ 2.36	SF	26967	$ 63,642.12	Unit cost obtained from Hardy Dam Kiewit estimate
	Dam pilot channel	$ 1,662,050.00	$ 8.00	CY	140741	$ 1,125,928.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove accumulated non-contaminated sediments	$ -	$ 7.09	CY	3741029	$ 26,523,893.84	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 5,494,625 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel, prorated at 67% to account for no dredging within new impoundment. Secondary tributary connections = 6,700 LF, assume 50' width dredged, 4' depth avg = 49,630 CY .
	Mobilization/demobilization	$ 236,154.00	$ 236,154.00	LS	1	$ 236,154.00	Utilize Mead & Hunt opinion
	Reuse(grading) of non-contaminated excavated and dredged material	$ -	$ 8.00	CY	4085790	$ 32,686,318.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading and surface preparation/amendments	$ -	$ 6,700.00	ACRE	1514	$ 10,143,800.00	Grading and reworking of newly exposed sediments within reservoir.
	Seed former reservoir bottom	$ 1,877,928.00	$ 3,100.00	ACRE	1514	$ 4,693,400.00	Seeding of newly exposed reservoir bottom.
	Plant former reservoir bottom	$ -	$ 3,072.00	ACRE	1514	$ 4,651,008.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant.
	Apply Erosion Control Measures: Silt Fence	$ 26,628.00	$ 5.00	LF	28000	$ 140,000.00	Unit cost adjusted per similar WSP projects.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Fish passage	$ -	$ 50,000.00	VLF	9	$ 450,000.00	Assume 6' height and 3' into downstream tie in. $50,000/VF.
	Channel creation - riffle section at downstream tie-in	$ -	$ 150.00	CY	5185	$ 777,777.78	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 350' length, 2' depth of riffle material.
	Concrete weir installation	$ -	$ 5,050.00	LF	200	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Bank Stabilization - Hard Structure	$ -	$ 333.33	LF	12896	$ 4,298,623.68	Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ 161,309.00	$ 54.53	LF	51584	$ 2,812,875.52	Assume 3H:1V, assume 3' bank (1 SY per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Salvage Value	$ (57,430.00)	$ (57,430.00)	LS	1	$ (57,430.00)	Utilize Mead & Hunt opinion
	Subtotal	**$22,496,945**				**$104,253,503**	
	Contingency					$10,425,350.33	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$15,638,025.49	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
	Engineering and Permitting					$4,048,872.62	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal + $400K for weir/fish ladder design.
	Construction Management & Biological					$2,085,070.07	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$136,450,822**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Tippy Dam
Decommissioning Cost Breakdown - Full Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	Unit	MSP Unit Cost	Quantity	MSP Opinion of Cost	MSP Notes
Substation	Remove buried lines between powerhouse and MTR No. 2	$ 213,037.50	LF		3000	$ 213,037.50	Utilize Mead & Hunt opinion
	Remove distribution line from Plant Bus	$ 7,102.50	LS			$ 7,102.50	Utilize Mead & Hunt opinion
General Site	Grade and restore site	$ 1,422.00	LS		3000	$ 1,422.00	Utilize Mead & Hunt opinion
	Remove office building	$ 94,402.50	LS			$ 94,402.50	Utilize Mead & Hunt opinion
	Remove plant access road	$ 2,299.00	LF		400	$ 2,299.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,806.00	LS			$ 11,806.00	Utilize Mead & Hunt opinion
	Remove storm drains	$ 20,680.00	EACH		11	$ 20,680.00	Utilize Mead & Hunt opinion
	Remove transformer and base equipment	$ 1,422.00	EA			$ 1,422.00	Utilize Mead & Hunt opinion
Powerhouse	Remove precast cupolas	$ 56,894.00	EA		88	$ 56,894.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 2,612,158.00	CY	$ 257.00	12600	$ 2,612,158.00	Cost cost obtained from nearby Dam Mead estimate
	Remove trash racks	$ 8,532.00	TON		24	$ 8,532.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 102,756.00	CY	$ 14.82	10500	$ 102,756.00	Utilize Mead & Hunt opinion
	Remove concrete/trash intake pile weir	$ 1,422.00	CY	$ 14.82	100	$ 1,422.00	Utilize Mead & Hunt opinion
	Remove gates	$ 25,632.00	TON		72	$ 25,632.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates	Demolish and remove concrete	$ 3,694,248.00	CY	$ 257.00	17253	$ 3,693,566.00	Cost cost obtained from nearby Dam Mead estimate
	Remove gates	$ 11,806.00	TON		34	$ 11,806.00	Utilize Mead & Hunt opinion
	Remove hoists and fixtures	$ 8,606.00	TON		27	$ 8,606.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 56,894.00	CY	$ 14.64	3809	$ 55,818.00	Cost cost obtained from nearby Dam Mead estimate
Earth Dam and Reservoir/River Channel	Drain reservoir	$ 1,335,637.00	LS		1	$ 1,335,637.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 1,422,000.00	CY	$ 14.82	95000	$ 1,407,900.00	Utilize Mead & Hunt opinion
	Reinforced concrete demolition	$ 474,197.00	CY	$ 257.00	1000	$ 474,197.00	Utilize Mead & Hunt opinion
	Fixed pitting removal	$ 82,695.00	CY	$ 3.80	35000	$ 82,695.00	Utilize Mead & Hunt opinion
	Dam pilot channel	$ 1,665,564.00	CY	$ 7.65	130501	$ 998,106.15	Utilize Mead & Hunt opinion
	Revetment shelters	$ 1,422.00	CY	$ 7.65	2400008	$ 17,019,587.16	Utilize Mead & Hunt opinion
	Sediment/debris excavation	$ 356,164.00	CY	$ 7.65	46	$ 356,164.00	Utilize Mead & Hunt opinion
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	CY	$ 6.00	2728697	$ 21,831,176.00	Additional offset to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$	ACRE	$ 6,700.00	951	$ 6,371,700.00	Grading and reworking of newly exposed sediments within reservoir.
	Thalmel creation - RiffIe Section at downstream toe in	$	CY	$ 150.00	14815	$ 2,222,250.00	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 1000' length, 2' depth of riffle material.
	Seal former reservoir bottom	$ 1,396,438.00	ACRE	$ 1,500.00	951	$ 2,848,108.00	Cost for all newly exposed reservoir bottom.
	Plant former reservoir bottom	$	ACRE	$ 2,072.00	951	$ 2,921,472.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant
	Apply erosion control measures	$ 1,667,338.00	LS			$ -	Not included - see riprap item below.
	Riprap	$ 355,500.00	CY	$ 9.00	35000	$ 150,000.00	Assume 1:1/EACH riprap on bottom
	Riprap	$	CY	$ 150.00	3000	$ 750,000.00	Assume 1:1/EACH required in addition to riffle channel
Bank Stabilization	Bank Stabilization - Hand Structure		LF	$ 203.00	11906	$ 3,969,160.31	Assume 20-CY, excavtor to bank, 4' embedment Rip, 40' boulders class 4 to 6 tonne, 2:2/3 CY bank, $/EACH
	Bank Stabilization - Live stakes and Jute Matting		LF	$ 54.53	47620	$ 2,597,285.71	Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY. Live stakes = $5.47/each, 4 stakes per SY, add 2 CY/LF riprap/mussel cobble at $/EACH CY for jute mat anchor)
	Subtotal	**$31,944,218**				**$72,754,810**	
	Contingency (10%)	$ 6,094,421.80				$7,275,480.98	Assume 10% of subtotal
	Owners Cost (10%)	$ 6,549,303.94				$ 7,820,291.48	Assume 10% of subtotal
	Engineering and Permitting					$7,282,409.33	Assume 3.0% of subtotal
	Construction Management & Biological Monitoring					$ 7,424,196.00	Assume 3% of subtotal
	Total	**$45,188,276**				**$104,233,027**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. MSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and MSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Tippy Dam
Decommissioning Cost Evaluation - Non-Power Operation

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	Unit	Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Impact Study	Environmental/Social Impact Study	$ 171,419.00	LS				Cost included in baseline studies, engineering & permitting.
General Site	Remove office/ building	$ 94,462.00	LS			$ 94,462.00	Utilize Mead & Hunt opinion
	Survey for Environmental Contamination	$ 2,362.00					
Powerhouse	Leave powerhouse intact	$ 247,575.00	LS			$ 247,575.00	Utilize Mead & Hunt opinion
	Survey for Environmental Contamination	$ 2,362.00	LS				Cost included in baseline studies, engineering & permitting.
	Remove or lay up equipment	$ 88,558.00	LS			$ 88,558.00	Utilize Mead & Hunt opinion
Spillway and Spill gates	Modify spillway to maintain flow/pond level	$ 88,558.00	CY		1560	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Installation of fish passage		VLF	$ 50,000.00	69	$ 3,450,000.00	Assume 69' vertical feet
	Subtotal	**$897,295**				**$3,968,153**	
	Contingency 10%	$89,730				$396,915	Utilize M&H Contingency for comparison
	Owners Cost (15%)	$134,594.40				$595,373	Utilize M&H Owner's Cost
	Baseline Studies, Engineering and Permitting					$917,399.36	13% 'impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management and Biological Monitoring					$396,915.30	Assume 10% of subtotal. No biological monitoring required.
	Total	**$1,121,620**				**$6,275,696**	

Consumers Energy
Tippy Dam
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	Unit	Unit Cost	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Remove buried lines between powerhouse and MTB No. 2	$ 213,037.00	LF		3000	$ 213,037.00	Utilize Mead & Hunt opinion
	Move distribution line from Plant Bus	$ 7,102.00	LS			$ 7,102.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 4,719.00	LF		2000	$ 4,719.00	Utilize Mead & Hunt opinion
	Remove office building	$ 94,462.00	LS		1	$ 94,462.00	Utilize Mead & Hunt opinion
	Remove plant access road	$ 2,359.00	LF		400	$ 2,359.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00	LS		1	$ 11,808.00	Utilize Mead & Hunt opinion
	Remove piezometers	$ 25,980.00	EACH		11	$ 25,980.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 488,350.00	LS		1	$ 488,350.00	Utilize Mead & Hunt opinion
	Remove precast cripplings	$ 55,264.00	CY		85	$ 55,254.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 2,613,016.00	CY	$ 207.00	12620	$ 2,612,340.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 6,621.00	TON		20	$ 6,621.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 153,701.00	CY	$ 14.84	10500	$ 153,720.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove downstream sheet pile wall	$ 16,516.00	SF	$ 2.34	7020	$ 16,520.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 25,822.00	TON		78	$ 25,822.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates	Demolish and remove concrete	$ 3,564,428.00	CY	$ 207.00	17215	$ 3,563,505.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 11,256.00	TON		34	$ 11,256.00	Utilize Mead & Hunt opinion
	Remove hoists and fixtures	$ 8,936.00	TON		27	$ 8,936.00	Utilize Mead & Hunt opinion
	Excavate/dispose earth fill	$ 55,625.00	CY	$ 14.84	3800	$ 55,632.00	Unit cost obtained from Hardy Dam Kiewit estimate
Earth Dam and Reservoir/River Channel	Drain Reservoir	$ 1,335,637.00	LS		1	$ 1,335,637.00	Utilize Mead & Hunt opinion
	Remove portion of earth dam; excavation	$ 1,185,895.00	CY	$ 14.64	81000	$ 1,185,840.00	Unit cost obtained from comparable WSP projects
	Remove accumulated non-contaminated sediments	$ -	CY	$ 7.09	2400506	$ 17,019,587.54	Established new impoundment footprint based on permissible depth with 5' weir in place. Assumed all sediments above this to remain in place and reworked. Assumed depth of 6" is dredged within the new footprint to remove fine grain material.
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	CY	$ 8.00	2634897	$ 21,079,176.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$ -	ACRE	$ 6,700.00	620	$ 4,154,000.00	Grading and reworking of newly exposed sediments within reservoir.
	Reinforced concrete demolition	$ 165,643.00	CY	$ 207.00	800	$ 165,643.00	Utilize Mead & Hunt opinion
	Sheet piling removal	$ 38,392.00	CY	$ 2.36	35000	$ 82,600.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Dam abut channel	$ 1,642,364.00	CY	$ 7.09	139201	$ 986,745.10	Utilize Mead & Hunt opinion
	Mobilization/demobilization	$ 236,154.00	LS		1	$ 236,154.00	Utilize Mead & Hunt opinion
	Channel creation - Riffle Section at downstream tie in	$ -	CY	$ 150.00	14815	$ 2,222,250.00	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 1000' length, 2' depth of riffle material.
	Seed former reservoir bottom	$ 1,396,408.00	ACRE	$ 3,100.00	620	$ 1,922,000.00	Seeding of newly exposed reservoir bottom.
	Plant former reservoir bottom	-	ACRE	$ 3,072.00	620	$ 1,904,640.00	Assume rear width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Apply erosion control measures	$ 1,887,558.00					
	Silt Fence	$ 28,530.00	LF	$ 5.00	30000	$ 150,000.00	Unit cost adjusted per similar projects.
	Concrete weir installation	$ -	LF	$ 5,050.00	200	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Fish Passage	$ -	VLF	$50,000.00	9	$ 450,000.00	Assume 6' height and 3' into downstream tie in. $50,000/VF.
	Riprap	$ -	CY	$ 150.00	5000	$ 750,000.00	Assumption of 5000 CY needed
	Bank Stabilization - Hard Structure	$ -	LF	$ 333.33	11008	$ 3,669,160.31	Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF Bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ -	LF	$ 54.53	47630	$ 2,597,285.71	Assume 2H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Subtotal	**$15,272,575.00**				**$68,577,554**	
	Contingency (10%)	$1,527,258				$6,857,755	Assume 10%
	Owners Cost (15%)	$2,290,886				$10,286,633	Assume 15%
	Engineering and Permitting					$2,800,214	Assume 3.5% of subtotal + 400k for concrete weir and fish passage design
	Construction Management & Biological Monitoring					$1,371,551	Assume 2%
	Total	**$19,090,719.75**				**$89,893,708**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Mio Dam
Decommissioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Move distribution lines from plant bus	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 7,833.00	LF	3320	$ 2.36	$ 7,833.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 7,078.00	STA	12	$ 590.00	$ 7,078.00	Utilize Mead & Hunt opinion
Remove storage building	$ 10,000.00	LS	1	$ 10,000.00	$ 10,000.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Removal of right downstream fishing pier: Reinforced concrete demolition	$ 10,353.00	CY	50	$ 207.00	$ 10,353.00	Utilize Mead & Hunt opinion
Removal of right downstream fishing pier: Sheet piling removal	$ 5,368.00	SF	2275	$ 2.36	$ 5,368.00	Utilize Mead & Hunt opinion
Remove piezometers	$ 61,408.00	EACH	26	$ 2,362.00	$ 61,408.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 71,376.00	Tons	549	$ 265.00	$ 145,485.00	M&H unit cost was $130, which is significantly lower than that of other dams. $265/Ton was more comparable to other dams for this item.
Remove generators	$ 19,112.00	Tons	147	$ 265.00	$ 38,955.00	M&H unit cost was $130, which is significantly lower than that of other dams. $265/Ton was more comparable to other dams.
Remove cranes	$ 2,340.00	Tons	18	$ 265.00	$ 4,770.00	M&H unit cost was $130, which is significantly lower than that of other dams. $265/Ton was more comparable to other dams.
Remove trash rack rake system	$ 1,560.00	Tons	12	$ 265.00	$ 3,180.00	M&H unit cost was $130, which is significantly lower than that of other dams. $265/Ton was more comparable to other dams.
Remove fixtures	$ 650.00	Tons	5	$ 265.00	$ 1,325.00	M&H unit cost was $130, which is significantly lower than that of other dams. $265/Ton was more comparable to other dams.
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 534,198.00	CY	12000	$ 207.00	$ 2,484,000.00	M&H quantity was 2,580 CY, which is significantly lower than that of other dams. 12,000 CY was more comparable to other dams for this item.
Remove trash racks	$ 2,480.00	Tons	10	$ 248.00	$ 2,480.00	Utilize Mead & Hunt opinion
Remove valves	$ 992.00	Tons	4	$ 248.00	$ 992.00	Utilize Mead & Hunt opinion
Remove trash rack platforms	$ 248.00	Tons	1	$ 248.00	$ 248.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,687.00	Tons	31	$ 248.00	$ 7,687.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 1,348,954.00	CY	6515	$ 207.00	$ 1,348,954.00	Utilize Mead & Hunt opinion
Remove gates	$ 1,736.00	Tons	7	$ 248.00	$ 1,736.00	Utilize Mead & Hunt opinion
Remove hoist rail	$ 744.00	Tons	3	$ 248.00	$ 744.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,240.00	Tons	5	$ 248.00	$ 1,240.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir /River Channel						
Drain 661-acre reservoir	$ 673,210.00	LS	1	$ 673,210.00	$ 673,210.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	$ 2,210,369.00	CY	151000	$ 14.64	$ 2,210,369.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	$ 621,161.00	CY	3000	$ 207.00	$ 621,161.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Sheet piling removal	$ 163,805.00	SF	69425	$ 2.36	$ 163,805.00	Utilize Mead & Hunt opinion
Remove accumulated sediments: Dam pilot channel dredging	$ 1,637,557.00	CY	138667	$ 7.09	$ 983,149.03	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 10,599,015.00	CY	1549890	$ 7.09	$ 10,988,720.10	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 1,495,309 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections =7410 LF, assume 50' width dredged, 4' depth avg = 59,890 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	106641	$ 7.09	$ 756,087.05	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
Contaminated Sediments - Disposal	$ -	Tons	184095	$ 70.00	$ 12,886,645.36	Disposal of contaminated sediment. Unit cost based on Kiewit cost estimate.
Seed former reservoir bottom	$ 698,204.00	AC	568	$ 3,100.00	$ 1,760,800.00	Acreage outside of dredged channels. Mead and Hunt unit cost seems low at $1,185/acre. M&H also quantified 599.1 AC of seeding. Wet meadow seed mix will be approximately $3.1K/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	568	$ 3,072.00	$ 1,744,896.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 15,216.00	LF	16000	$ 5.00	$ 80,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ -	LF	16172	$ 333.33	$ 5,390,612.76	33,020 LF main channel; 7,410 LF total of 5 tributary tie-ins. Assume 3H:1V, assume 6' bank, 2' embankment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hard channel structure banks for all banks.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Bank Stabilization: Live stakes and Jute Matting	$ 57,782.00	LF	64688	$ 54.33	$ 3,514,499.04	33,020 LF main channel; 7,410 LF total of 5 tributary tie-ins. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes =$5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 85% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	1670701	$ 8.00	$ 13,365,610.40	Additional effort to grade/rework material excavated/dredged for specific habitat creation (non-contaminated sediments).
Grading & Surface Preparation/Amendments	$ -	AC	568	$ 6,700.00	$ 3,805,600.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	8889	$ 150.00	$ 1,333,333.33	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 600' length, 2' depth of riffle material.
Miscellaneous Items						
Salvage Value	$ (42,763.00)	LS	1	$ (42,763.00)	$ (42,763.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	To be evaluated. 3 Boat Launches; 1 Canoe Portage; 6 Fishing Access Locations, approximately 38 private boat docks. To be evaluated. No costs included.
Subtotal	**$20,840,099**				**$65,466,447**	
Contingency					$5,257,980.17	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
Owner's Cost					$7,886,970.26	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
Engineering and Permitting					$1,840,293.06	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal.
Construction Management & Biological Monitoring					$1,051,596.03	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
Total					**$81,503,287**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Mio Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site						
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Powerhouse						
Precast concrete stoplogs	$ 97,508.00	CY	150	$ 650.00	$ 97,508.00	Utilize Mead & Hunt opinion
Water conduit sand	$ 23,907.00	CY	1500	$ 15.94	$ 23,907.00	Utilize Mead & Hunt opinion
Safety measures	$ 76,751.00	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Spillway gate modification to maintain flow/pond level	$ 88,558.00	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Reservoir Water Quality Enhancements	$ -	LS	1	$ -	$ -	To be evaluated. Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Installation of fish passage	$ -	VLF	23	$ 50,000.00	$ 1,150,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (959') to 3' below downstream water elevation (939').
Subtotal	**$380,006**				**$1,525,282**	
Contingency					$152,528.20	Assume 10% of subtotal.
Owner's Cost					$228,792.30	Assume 15% of subtotal.
Engineering and Permitting					$718,949.87	15% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$152,528.20	Assume 10% of subtotal. No biological monitoring required.
Total					**$2,778,081**	

Consumers Energy
Mio Dam
Decommicisioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Move distribution lines from plant bus	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 7,833.00	LF	3320	$ 2.36	$ 7,833.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 7,078.00	STA	12	$ 590.00	$ 7,078.00	Utilize Mead & Hunt opinion
Remove storage building	$ 10,000.00	LS	1	$ 10,000.00	$ 10,000.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Removal of right downstream fishing pier: Reinforced concrete demolition	$ 10,353.00	CY	50	$ 207.00	$ 10,353.00	Utilize Mead & Hunt opinion
Removal of right downstream fishing pier: Sheet piling removal	$ 5,368.00	SF	2275	$ 2.36	$ 5,368.00	Utilize Mead & Hunt opinion
Remove piezometers	$ 61,408.00	EACH	26	$ 2,362.00	$ 61,408.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove turbines	$ 71,376.00	Tons	549	$ 265.00	$ 145,485.00	M&H unit cost was $130, which is significantly lower than that of other dams. 626574on was more comparable to other dams for this item.
Remove generators	$ 19,112.00	Tons	147	$ 265.00	$ 38,955.00	M&H unit cost was $130, which is significantly lower than that of other dams. 626574on was more comparable to other dams.
Remove cranes	$ 2,340.00	Tons	18	$ 265.00	$ 4,770.00	M&H unit cost was $130, which is significantly lower than that of other dams. 626574on was more comparable to other dams.
Remove trash rack rake system	$ 1,560.00	Tons	12	$ 265.00	$ 3,180.00	M&H unit cost was $130, which is significantly lower than that of other dams. 626574on was more comparable to other dams.
Remove fixtures	$ 650.00	Tons	5	$ 265.00	$ 1,325.00	M&H unit cost was $130, which is significantly lower than that of other dams. 626574on was more comparable to other dams.
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 534,198.00	CY	12000	$ 207.00	$ 2,484,000.00	M&H quantity was 2,580 CY, which seems low compared to that of other dams. 12,000 CY was more comparable to that of other dams.
Remove trash racks	$ 2,480.00	Tons	10	$ 248.00	$ 2,480.00	Utilize Mead & Hunt opinion
Remove valves	$ 992.00	Tons	4	$ 248.00	$ 992.00	Utilize Mead & Hunt opinion
Remove trash rack platforms	$ 248.00	Tons	1	$ 248.00	$ 248.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,687.00	Tons	31	$ 248.00	$ 7,687.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 1,348,954.00	CY	6515	$ 207.00	$ 1,348,954.00	Utilize Mead & Hunt opinion
Remove gates	$ 1,736.00	Tons	7	$ 248.00	$ 1,736.00	Utilize Mead & Hunt opinion
Remove hoist rail	$ 744.00	Tons	3	$ 248.00	$ 744.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,240.00	Tons	5	$ 248.00	$ 1,240.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/ River Channel						
Drain 661-acre reservoir	$ 673,210.00	LS	1	$ 673,210.00	$ 673,210.00	Utilize Mead & Hunt opinion
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 118,569.00	CY	6500	$ 14.64	$ 95,160.00	Utilize M&H unit cost. Assume 3:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 6,212.00	CY	129	$ 207.00	$ 26,703.00	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	$ 5,899.00	SF	2985	$ 2.36	$ 7,045.25	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments: Dam pilot channel dredging	$ 1,637,557.00	CY	138667	$ 7.09	$ 983,149.03	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 10,599,015.00	CY	1250890	$ 7.09	$ 8,868,810.10	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 1,498,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel in full removal. Prorate at 80.0% to account for no dredging within new impoundment. Secondary tributary connections = 7,430 LF, assume 50' width dredged, 4' depth avg = 54,890 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	106641	$ 7.09	$ 756,087.05	Assume 10% of reservoir requires dredging at average depth of 12" prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
Contaminated Sediments - Disposal	$ -	Tons	184095	$ 70.00	$ 12,886,645.36	Disposal of contaminated sediment.
Seed former reservoir bottom	$ 698,204.00	AC	509	$ 3,100.00	$ 1,577,900.00	Acreage outside of dredged channels. Mead and Hunt unit cost seems low at $1,165/acre. M&H also quantified 599.1 AC of seeding. Wet meadow seed mix will be approximately $3.34/AC, upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	509	$ 3,072.00	$ 1,563,648.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $5.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 15,216.00	LF	16000	$ 5.00	$ 80,000.00	M&H assume $5.00/LF. Seems low by a factor of 5.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Bank Stabilization: Hard Structure	$ -	LF	13576	$ 333.33	$ 4,525,288.08	26,530 LF main channel. 7,410 LF total of 5 tributaries. Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hard channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 57,782.00	LF	55264	$ 54.33	$ 3,002,493.12	26,530 LF main channel. 7,410 LF total of 5 tributaries. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5Y per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	1257101	$ 8.00	$ 10,056,810.40	Additional effort to grade/rework material excavated/dredged for specific habitat creation (non-contaminated sediments).
Grading & Surface Preparation/Amendments	$ -	AC	509	$ 6,700.00	$ 3,410,300.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	8889	$ 150.00	$ 1,333,333.33	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 600' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
Installation of Fish Passage	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
Miscellaneous Items						
Salvage Value	$ (42,763.00)	LS	1	$ (42,763.00)	$ (42,763.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	To be evaluated. 3 Boat Launches, 1 Canoe Portage, 6 Fishing Access Locations, approximately 36 private boat docks. To be evaluated. No costs included.
Subtotal	**$17,975,444**				**$56,494,532**	
Contingency					$4,360,788.64	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
Owner's Cost					$6,541,182.95	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
Engineering and Permitting					$1,926,276.02	Assume 3.3% of subtotal excluding cost of contaminated sediment disposal + $400K for weir/fish ladder design.
Construction Management & Biological Monitoring					$872,157.73	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
Total					**$70,194,937**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Kiewit Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation							
Remove lines from plant to substation	$ 71,024.00	$ -	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Move distribution lines from plant bus	$ 71,024.00	$ -	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Substation Removal	$ -	$ 140,000.00	LS	0	$ -	$ -	Mead & Hunt propose substation to remain in place.
General Site							
Remove security fencing	$ 20,858.00	$ 300,000.00	LF	8840	$ 2.36	$ 20,858.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 35,392.00		STA	60	$ 590.00	$ 35,392.00	Utilize Mead & Hunt opinion
Plug and abandon artesian wells	$ 12,000.00		EACH	24	$ 500.00	$ 12,000.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00		LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00		LS	1	$ -	$ -	Included in engineer baseline studies.
Remove piezometers	$ 23,619.00		EACH	10	$ 2,362.00	$ 23,619.00	Utilize Mead & Hunt opinion
Powerhouse							
Survey for contaminants	$ 2,362.00		LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 155,774.00		Tons	553	$ 282.00	$ 155,774.00	Utilize Mead & Hunt opinion
Remove generators	$ 60,845.00		Tons	216	$ 282.00	$ 60,845.00	Utilize Mead & Hunt opinion
Remove cranes	$ 7,606.00		Tons	27	$ 282.00	$ 7,606.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,408.00		Tons	5	$ 282.00	$ 1,408.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,535.00		Tons	9	$ 282.00	$ 2,535.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	$ 4,520,000.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,631,237.00		CY	12708	$ 207.00	$ 2,631,257.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 2,817.00		Tons	10	$ 265.00	$ 2,817.00	Utilize Mead & Hunt opinion
Remove valves	$ 2,254.00		Tons	8	$ 265.00	$ 2,254.00	Utilize Mead & Hunt opinion
Remove gates	$ 18,028.00		Tons	64	$ 265.00	$ 18,028.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates							
Spillway Site Restoration: Planting and Seeding	$ -	$ 220,000.00	LS	0	$ -	$ -	No items for this structure in Mead & Hunt opinion for partial removal option. Accounted for by WSP in bank stabilization, seeding, and planting quantities.
Earth Dam and Reservoir/River Channel							
Drain 1606-acre reservoir	$ 530,877.00	$ 180,000.00	LS	1	$ 530,877.00	$ 530,877.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall and emergency spillway: Excavation	$ 5,152,649.00	$ 12,000,000.00	CY	352000	$ 14.64	$ 5,152,649.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall and emergency spillway: Reinforced concrete demolition	$ 614,949.00	$ 610,000.00	CY	2970	$ 207.00	$ 614,949.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall and emergency spillway: Sheet piling removal	$ 115,613.00	$ -	SF	49000	$ 2.36	$ 115,613.00	Utilize Mead & Hunt opinion
Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	$ 1,659,062.00	$ 5,100,000.00	CY	140488	$ 7.09	$ 996,059.92	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments (non-contaminated): Reservoir dredging	$ 4,125,106.00	$ 5,280,000.00	CY	649000	$ 7.09	$ 4,601,410.00	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume $92,000 CY (from M&H opinion) required to remove fine-grain sediments and re-establish channel. Secondary tributary connections = 6,580 LF, assume 50' width dredged, 4' depth dug = 67,000 CY.
Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	$ 236,154.00	$ -	LS	2	$ 118,077.00	$ 236,154.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (>40') being greater than vertical reach of hydraulic dredge (20').
Contaminated Sediments - removal	$ -	$ 12,300,000.00	CY	162301	$ 7.09	$ 1,150,716.45	Assume 10% of reservoir requires dredging at average depth of 12' prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
Contaminated Sediments - Disposal	$ -	$ 170,420,000.00	Tons	280181	$ 70.00	$ 19,612,655.42	Disposal of contaminated sediment.
Seed former reservoir bottom	$ 1,059,344.00	$ 2,260,000.00	AC	884	$ 3,100.00	$ 2,740,400.00	Mead and Hunt unit cost seems low at about $1,165/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3.31/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	$ -	AC	884	$ 3,072.00	$ 2,715,648.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 20,922.00		LF	22000	$ 5.00	$ 110,000.00	Adjusted unit rate per similar projects.
Apply Erosion Control Measures: Rip-Rap Protection	$ 1,769,586.00		CY	5000	$ 150.00	$ 750,000.00	Uses rip-rap for temporary placement for erosion control. Assume higher unit cost than below, but less quantity.
Bank Stabilization: Hard Structure	$ -	$ 3,700,000.00	LF	9339	$ 333.33	$ 3,112,968.87	(2) 150 LF main channel; 6,580 LF for tributary tie-ins. Assume 3H:1V, assume 6' bank, 2' embedment max., 80" thickness D50 = 15" riprap, 2.2t C1V-F bank, $333/CY. Assume 10% hard channel structure banks for all bank.
Bank Stabilization: Live stakes and Juta Matting	$ 89,081.00		LF	52921	$ 54.33	$ 2,875,197.93	Assume 3H:1V, assume 6' bank, 2' embedment max., Mean erosion rate until cost was low at 96.2ft/1Yr. Assume 3H:1V, assume 3' bank (1.3* per LF), add 30% to juta mat for anchor. Juta Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY-F riprap/mixed subtitle at $333/CY for junk mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	$ -	CY	1062539	$ 8.00	$ 8,500,313.60	Assuming grading for excavated material of earth dam and 60% of dredged material (non-contaminated material).
Grading & Surface Preparation/Amendments	$ -	$ -	AC	884	$ 6,700.00	$ 5,922,800.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	$ -	CY	18518	$ 150.00	$ 2,777,700.00	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 10'/2' length, 2' depth of riffle material.
Miscellaneous Items							
Salvage Value	$ (36,499.00)	$ (40,000.00)	LS	1	$ (36,499.00)	$ (36,499.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	$ -	LS	1	$ -	$ -	To be evaluated. 4 Boat Launches, 1 Canoe Portage, 1 Fishing Access Location, 2 Swim Areas, approximately 45 private boat docks. No Costs included.
Subtotal	**$19,514,740**	**$216,960,000**				**$65,672,785**	
Contingency						$4,606,012.39	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
Owner's Cost						$6,909,019.47	Assume 15% of subtotal excluding cost of contaminated sediment disposal.

Scope Item	Mead & Hunt Estimate Cost	Kiewit Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Engineering and Permitting						$1,612,104.54	Assume 2.5% of subtotal excluding cost of contaminated sediment disposal.
Construction Management & Biological Monitoring						$921,202.60	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
Total						**$79,721,125**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Non-Power Operation

Scope Item	Mead & Hunt Estimate Cost	Kiewit Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site							
Survey site for env. contamination	$ 2,362.00	$ -	LS	1	$ -	$ -	Included in Engineer baseline studies.
Powerhouse							
Safety measures	$ 76,751.00	$ -	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Spiral case enlargement	$ 17,712.00	$ -	LS	1	$ 17,712.00	$ 17,712.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	$ -	LS	1	$ -	$ -	Included in Engineer baseline studies.
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	$ -	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	$ -	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates							
Spillway gate modification to maintain flow/pond level	$ 88,558.00	$ -	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel							
Reservoir Water Quality Enhancements	$ -	$ -	LS	1	$ -	$ -	To be evaluated. No costs included.
Installation of fish passage	$ -	$ -	VLF	42	$ 50,000.00	$ 2,100,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (624') to 3' below downstream water elevation (735').
Subtotal	**$276,303**	**$0**				**$2,371,579**	
Contingency						$237,157.90	Assume 10% of subtotal.
Owner's Cost						$355,736.85	Assume 15% of subtotal.
Engineering and Permitting						$805,975.27	5.5% =impact study=$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management						$237,157.90	Assume 10% of subtotal. No biological monitoring required.
Total						**$4,007,607**	

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Kiewit Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation							
Remove lines from plant to substation	$ 71,024.00	$ -	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Move distribution lines from plant bus	$ 71,024.00	$ -	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
Substation Removal	$ -	$ 140,000.00	LS	0	$ -	$ -	Mead & Hunt propose substation to remain in place.
General Site							
Remove security fencing	$ 20,858.00		LF	8840	$ 2.36	$ 20,858.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 35,392.00		STA	60	$ 590.00	$ 35,392.00	Utilize Mead & Hunt opinion
Plug and abandon artesian wells	$ 12,000.00		EACH	24	$ 500.00	$ 12,000.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	$ 300,000.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for elec contamination	$ 2,362.00		LS	1	$ -	$ -	Included in Engineer baseline studies
Remove piezometers	$ 23,619.00		EACH	10	$ 2,362.00	$ 23,619.00	Utilize Mead & Hunt opinion
Powerhouse							
Survey for contaminants	$ 2,362.00		LS	1	$ -	$ -	Included in Engineer baseline studies
Remove turbines	$ 155,774.00		Tons	553	$ 282.00	$ 155,774.00	Utilize Mead & Hunt opinion
Remove generators	$ 60,845.00		Tons	216	$ 282.00	$ 60,845.00	Utilize Mead & Hunt opinion
Remove cranes	$ 7,606.00		Tons	27	$ 282.00	$ 7,606.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,408.00		Tons	5	$ 282.00	$ 1,408.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,535.00		Tons	9	$ 282.00	$ 2,535.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	$ 4,520,000.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,631,237.00		CY	12708	$ 207.00	$ 2,631,297.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 2,817.00		Tons	10	$ 265.00	$ 2,817.00	Utilize Mead & Hunt opinion
Remove valves	$ 2,254.00		Tons	8	$ 265.00	$ 2,254.00	Utilize Mead & Hunt opinion
Remove gates	$ 18,028.00		Tons	64	$ 265.00	$ 18,028.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates							
Spillway Site Restoration-Planning and Seeding	$ -	$ 220,000.00	LS	0	$ -	$ -	No items for this structure in Mead & Hunt opinion for partial removal option. Accounted for by WSP in bank stabilization, seeding, and planting quantities.
Earth Dam and Reservoir /River Channel							
Drain 1006-acre reservoir: spillway operation	$ 236,186.00		Months	50	$ 4,724.00	$ 236,186.00	Utilize Mead & Hunt opinion
Drain 1006-acre reservoir: Stoplog bulkhead	$ 58,505.00	$ 180,000.00	CY	90	$ 650.00	$ 58,505.00	Utilize Mead & Hunt opinion
Drain 1006-acre reservoir: Wetlands monitoring program	$ 236,186.00		Months	50	$ 4,724.00	$ 236,186.00	Utilize Mead & Hunt opinion
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 548,347.00	$ -	CY	53700	$ 14.64	$ 786,168.00	Utilize M&H unit cost. No Kiewit estimate for partial removal. Assume 2:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 31,058.00	$ -	CY	454	$ 207.00	$ 94,062.87	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	$ 8,093.00	$ -	SF	7497	$ 2.36	$ 17,692.92	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	$ 1,659,062.00	$ 5,100,000.00	CY	140488	$ 7.09	$ 996,059.92	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments (non-contaminated): Reservoir dredging	$ 4,125,106.00	$ 5,280,000.00	CY	566938	$ 7.09	$ 4,019,590.42	Assumes dredging 400' wide main channel is re-established with limited dredging. Assume 660,000CY (From M&H opinion) required to remove fine grain sediments and re-establish channel in full removal. Prorate at 85.9% to account for no dredging within new impoundment. Secondary tributary connections = 9,000 LF; assume 50' width dredged, 4' depth avg = 67,000 CY.
Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	$ 236,154.00	$ -	LS	2	$ 118,077.00	$ 236,154.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (>40') being greater than vertical reach of hydraulic dredge (20').
Contaminated Sediments - Removal	$ -	$ 12,300,000.00	CY	162301	$ 7.09	$ 1,150,716.45	Assume 10% of reservoir requires dredging at average depth of 12' prior to drawdown to remove contaminated sediment. Dependent on sediment characterization.
Contaminated Sediments - Disposal	$ -	$ 170,420,000.00	Tons	280181	$ 70.00	$ 19,612,655.42	Disposal of contaminated sediment.
Seed former reservoir bottom	$ 1,059,344.00	$ 2,260,000.00	AC	881	$ 3,100.00	$ 2,731,100.00	Mead and Hunt unit cost seems low at about $1,180/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3,100/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	$ -	AC	881	$ 3,072.00	$ 2,706,432.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6/2 containers; 1-2' high.
Apply erosion control measures: Silt Fence	$ 20,922.00		LF	22000	$ 5.00	$ 110,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00		CY	5000	$ 150.00	$ 750,000.00	Items rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ -	$ 3,700,000.00	LF	8430	$ 333.33	$ 2,809,971.90	19,125 LF main channel, $380 LF for tributary tie-ins. Assume 3H:1V, assume 8' bank, 2' embankment max, 30" thickness 150 = 10' riprap, 2.2 CY/LF bank, $400/CY. Assume 10% hard channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 89,081.00		LF	47770	$ 54.33	$ 2,595,344.10	19,125 LF main channel, $380 LF for tributary tie-ins. M&H erosion mat unit cost was low at $2.24/ SY. Assume 3H:1V, assume 3' bank (1.3' per LF), add 30% to jute mat for anchor, Jute Mat = $2.06/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/erosion control at $333/CY for jute mat anchor). Assume 85% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	$ -	CY	690383	$ 8.00	$ 5,523,067.20	Additional effort to grade/rework material excavated/dredged for specific habitat creation. Assuming grading for excavated material of earth dam and 60% of dredged material (non-contaminated material).
Grading & Surface Preparation/Amendments	$ -	$ -	AC	881	$ 6,700.00	$ 5,902,700.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie-in	$ -	$ -	CY	8889	$ 150.00	$ 1,333,333.33	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 800' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' deep height + 2' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.

Scope Item	Mead & Hunt Estimate Cost	Kiewit Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Installation of Fish Passage	$ -	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
Miscellaneous Items							
Salvage Value	$ (36,499.00)	$ (40,000.00)	LS	1	$ (36,499.00)	$ (36,499.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	$ -	LS	1	$ -	$ -	To be evaluated - no cost included. 4 Boat Launches, 1 Canoe Portage, 1 Fishing Access Location, 2 Swim Areas, approximately 45 private boat docks
Subtotal	**$13,239,027**	**$204,380,000**				**$56,522,599**	
Contingency						$3,690,994.31	Assume 10% of subtoal excluding cost of contaminated sediment disposal.
Owner's Cost						$5,536,491.47	Assume 15% of subtoal excluding cost of contaminated sediment disposal.
Engineering and Permitting						$1,691,848.01	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal + $400K for swim/fish ladder design.
Construction Management & Biological Monitoring						$738,198.86	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
Total						**$68,180,131**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 11,278.00	LF	4780	$ 2.36	$ 11,278.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 10,028.00	STA	17	$ 590.00	$ 10,028.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove piezometers	$ 35,428.00	EACH	15	$ 2,362.00	$ 35,428.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 183,531.00	Tons	693	$ 265.00	$ 183,531.00	Utilize Mead & Hunt opinion
Remove generators	$ 19,333.00	Tons	73	$ 265.00	$ 19,333.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove trash rack rake system	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 4,237.00	Tons	16	$ 265.00	$ 4,237.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,596.00	Tons	6	$ 266.00	$ 1,596.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,161,018.00	CY	10437	$ 207.00	$ 2,161,018.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 15,890.00	Tons	60	$ 265.00	$ 15,890.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,049,831.00	CY	9900	$ 207.00	$ 2,049,831.00	Utilize Mead & Hunt opinion
Remove gates	$ 8,210.00	Tons	31	$ 248.00	$ 8,210.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,324.00	Tons	5	$ 248.00	$ 1,324.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 743-acre reservoir	$ 807,294.00	LS	1	$ 807,294.00	$ 807,294.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	$ 1,479,800.00	CY	99135	$ 14.64	$ 1,479,800.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	$ 476,223.00	CY	2300	$ 207.00	$ 476,223.00	Utilize Mead & Hunt opinion
Remove accumulated sediments: Dam pilot channel dredging	$ 1,630,448.00	CY	139065	$ 7.09	$ 978,880.85	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 4,208,397.00	CY	609770	$ 7.09	$ 4,323,269.30	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 584,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections +2,160 LF, assume 50' width dredged, 4' depth avg = 35,200 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment. No costs included.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment. No costs included.
Seed former reservoir bottom	$ 866,736.00	AC	583	$ 3,100.00	$ 1,807,300.00	Mead and Hunt unit cost seems low at $1,185/acre. M&H also quantified entire reservoir (743 AC) to be seeded. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3.3/AC, upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	583	$ 3,072.00	$ 1,790,976.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 15,216.00	LF	16000	$ 5.00	$ 80,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	12078	$ 333.33	$ 4,025,959.74	29,005 LF main channel; 2,190 LF Baker Creek tributary. Assume 3H:1V, assume 6' bank, 3" embedment mav, 36" thickness D90 = 12" riprap, 2.2C:1V LF bank, $1593/CY. Assume 20% hand channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 57,782.00	LF	48312	$ 54.33	$ 2,624,790.96	26,005 LF main channel; 2,190 LF Baker Creek tributary. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per 5', add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	846970	$ 8.00	$ 6,775,760.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	583	$ 6,700.00	$ 3,906,100.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	10074	$ 150.00	$ 1,511,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 680' length, 2' depth of riffle material.
Miscellaneous Items						
Salvage Value	$ (42,166.00)	LS	1	$ (42,166.00)	$ (42,166.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	1 Boat Launch, 2 Canoe Portages, 3 Fishing Access Locations, approximately 0 private boat docks. To be evaluated. No costs included.
Subtotal	**$17,822,570**				**$35,074,243**	

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Contingency					$3,607,424.30	Assume 10% of subtotal
Owner's Cost					$5,411,136.44	Assume 15% of subtotal
Engineering and Permitting					$1,262,598.50	Assume 3.5% of subtotal
Construction Management & Biological Monitoring					$721,484.86	Assume 2% of subtotal
Total					**$47,076,887**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Non-Power Operation

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site						
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Powerhouse						
Precast concrete stoplogs	$ 162,513.00	CY	250	$ 650.00	$ 162,513.00	Utilize Mead & Hunt opinion
Water conduit sand	$ 65,347.00	CY	4100	$ 15.94	$ 65,347.00	Utilize Mead & Hunt opinion
Safety measures	$ 76,751.00	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Spillway gate modification to maintain flow/pond level	$ 88,558.00	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Reservoir Water Quality Enhancements	$ -	LS	1	$ -	$ -	To be evaluated. Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Installation of fish passage	$ -	VLF	29	$ 50,000.00	$ 1,450,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (735') to 3' below downstream water elevation (709').
Subtotal	**$486,451**				**$1,931,727**	
Contingency					$193,172.70	Assume 10% of subtotal.
Owner's Cost					$289,759.05	Assume 15% of subtotal.
Engineering and Permitting					$746,822.45	15% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$193,172.70	Assume 10% of subtotal. No biological monitoring required.
Total					**$3,354,654**	

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 11,278.00	LF	4780	$ 2.36	$ 11,278.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 10,028.00	STA	17	$ 590.00	$ 10,028.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove piezometers	$ 35,428.00	EACH	15	$ 2,362.00	$ 35,428.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove turbines	$ 183,531.00	Tons	693	$ 265.00	$ 183,531.00	Utilize Mead & Hunt opinion
Remove generators	$ 19,333.00	Tons	73	$ 265.00	$ 19,333.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove trash rack rake system	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 4,237.00	Tons	16	$ 265.00	$ 4,237.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,596.00	Tons	6	$ 266.00	$ 1,596.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,161,018.00	CY	10437	$ 207.00	$ 2,161,018.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 15,890.00	Tons	60	$ 265.00	$ 15,890.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,049,831.00	CY	9900	$ 207.00	$ 2,049,831.00	Utilize Mead & Hunt opinion
Remove gates	$ 8,210.00	Tons	31	$ 248.00	$ 8,210.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,324.00	Tons	5	$ 248.00	$ 1,324.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 743-acre reservoir	$ 807,294.00	LS	1	$ 807,294.00	$ 807,294.00	Utilize Mead & Hunt opinion
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 282,957.00	CY	13100	$ 14.64	$ 191,784.00	Utilize M&H unit cost. Assume 2:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 44,517.00	CY	304	$ 207.00	$ 476,223.00	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments: Dam pilot channel dredging	$ 1,630,448.00	CY	138065	$ 7.09	$ 978,880.85	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 4,208,397.00	CY	513023	$ 7.09	$ 3,637,332.63	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 584,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Prorate at 83.7% to account for no dredging within new impoundment. Secondary tributary connections =2,190 LF, assume 50' width dredged, 4' depth avg = 16,200 CY
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment. No cost included.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment. No cost included.
Seed former reservoir bottom	$ 866,736.00	AC	546	$ 3,100.00	$ 1,692,600.00	Mead and Hunt unit cost seems low at $1,300/acre. M&H also quantified entire reservoir (743 AC) to be seeded. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3,1K/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	546	$ 3,072.00	$ 1,677,312.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 15,216.00	LF	16000	$ 5.00	$ 80,000.00	Adjusted unit price per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	10282	$ 333.33	$ 3,427,299.06	2,515 LF main channel; 2,190 LF Baker Creek tributary. Assume 3H:1V, assume 5' bank, 3' embedment max, 30" thickness D50 = 15" riprap, 2.2C:1V:LF bank, $1560/CY. Assume 20% hand channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 57,782.00	LF	41128	$ 54.33	$ 2,234,484.24	2,515 LF main channel; 2,190 LF Baker Creek tributary. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	664188	$ 8.00	$ 5,313,503.84	Additional effort to grade/rework material excavated/dredged for specific habitat creation
Grading & Surface Preparation/Amendments	$ -	AC	546	$ 6,700.00	$ 3,658,200.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	7407	$ 150.00	$ 1,111,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 500' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $7850/CY. Pile cost included.
Installation of Fish Passage	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6.7T drop from weir + 2.3T below downstream water elevation.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Miscellaneous Items						
Salvage Value	$ (42,166.00)	LS	1	$ (42,166.00)	$ (42,166.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	1 Boat Launch, 2 Canoe Portages, 3 Fishing Access Locations, approximately 0 private boat docks. To be evaluated. No costs included.
Subtotal	**$16,194,021**				**$32,232,803**	
Contingency					$3,223,280.30	Assume 10% of subtotal
Owner's Cost					$4,834,920.45	Assume 15% of subtotal
Engineering and Permitting					$1,528,148.11	Assume 3.5% of subtotal + $400K for weir/fish ladder design.
Construction Management & Biological Monitoring					$644,656.06	Assume 2% of subtotal
Total					**$42,463,808**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Five Channels Dam
Decommicsioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 4,188.00	LF	1775	$ 2.36	$ 4,188.00	Utilize Mead & Hunt opinion
Remove Office buildings/Warehouses	$ 94,462.00	LS	1	$ 94,462.00	$ 94,462.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 4,129.00	STA	7	$ 590.00	$ 4,129.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove piezometers	$ 23,619.00	EACH	10	$ 2,362.00	$ 23,619.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 162,344.00	Tons	613	$ 265.00	$ 162,344.00	Utilize Mead & Hunt opinion
Remove generators	$ 26,484.00	Tons	100	$ 265.00	$ 26,484.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove hoists	$ 3,176.00	Tons	12	$ 265.00	$ 3,176.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,277,590.00	CY	11000	$ 207.00	$ 2,277,590.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 16,155.00	Tons	61	$ 265.00	$ 16,155.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,399,337.00	CY	11588	$ 207.00	$ 2,399,337.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove hoist rail/platform	$ 1,854.00	Tons	7	$ 265.00	$ 1,854.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,119.00	Tons	8	$ 265.00	$ 2,119.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 212-acre reservoir	$ 883,073.00	LS	1	$ 883,073.00	$ 883,073.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	$ 1,294,018.00	CY	88400	$ 14.64	$ 1,294,018.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	$ 147,008.00	CY	710	$ 207.00	$ 147,008.00	Utilize Mead & Hunt opinion
Remove accumulated sediments: Dam pilot channel dredging	$ 1,628,169.00	CY	137872	$ 7.09	$ 977,512.48	Utilize M&H quantity and Kleuit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 5,310,604.00	CY	751970	$ 7.09	$ 5,331,467.30	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 749,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections = 400 LF, assume 50' width dredged, 4' depth avg.= 2,870 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment. No costs included.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment. No costs included.
Seed former reservoir bottom	$ 209,461.00	AC	167	$ 3,100.00	$ 517,700.00	Mead and Hunt unit cost seems low at about $1,100/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $5.3/LF,AC upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	167	$ 3,072.00	$ 513,024.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 stems per acre at $6.40 per plant (#2 containers, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 7,608.00	LF	8000	$ 5.00	$ 40,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	6716	$ 333.33	$ 2,238,644.28	16,390 LF main channel; 400 LF tributary tie-in. Assume 3H:1V; assume 6' bank, 2' embedment max, 80" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hard channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 17,816.00	LF	26864	$ 54.33	$ 1,459,521.12	16,390 LF main channel; 400 LF tributary tie-in. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.9' per LF), add 30% for jute mat for anchor. Jute Mat = $0.64/SY, Live stakes = $5.47/each. 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	978242	$ 8.00	$ 7,825,936.00	Assuming grading for excavated material of earth dam and all of dredged material.
Grading & Surface Preparation/Amendments	$ -	AC	167	$ 6,700.00	$ 1,118,900.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	13185	$ 150.00	$ 1,977,777.78	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 890' length, 2' depth of riffle material.
Miscellaneous Items						
Salvage Value	$ (39,230.00)	LS	1	$ (39,230.00)	$ (39,230.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	1 Boat Launch, 1 Canoe Portage, 3 Fishing Access locations, approximately 2 private boat docks. To be evaluated. No costs included.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Subtotal	**$18,303,067**				**$30,335,996**	
Contingency					$3,033,599.60	Assume 10% of subtotal
Owner's Cost					$4,550,399.39	Assume 15% of subtotal
Engineering and Permitting					$1,061,759.86	Assume 3.5% of subtotal
Construction Management & Biological Monitoring					$606,719.92	Assume 2% of subtotal
Total					**$39,588,475**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Five Channels Dam
Decommissioning Cost Evaluation - Non-Power Operation

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site						
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Not part of construction costs.
Remove Office buildings/Warehouses	$ 94,462.00	LS	1	$ 94,462.00	$ 94,462.00	Utilize Mead & Hunt opinion
Powerhouse						
Precast concrete stoplogs	$ 149,512.00	CY	230	$ 650.00	$ 149,512.00	Utilize Mead & Hunt opinion
Water conduit sand	$ 65,347.00	CY	4100	$ 16.00	$ 65,347.00	Utilize Mead & Hunt opinion
Safety measures	$ 76,751.00	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Not part of construction costs.
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Spillway gate modification to maintain flow/pond level	$ 88,558.00	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir /River Channel						
Reservoir Water Quality Enhancements	$ -	LS	1	$ -	$ -	To be evaluated. Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Installation of fish passage	$ -	VLF	37	$ 50,000.00	$ 1,850,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (709') to 3' below downstream water elevation (675').
Subtotal	**$567,912**				**$2,413,188**	
Contingency					$241,318.80	Assume 10% of subtoal.
Owner's Cost					$361,978.20	Assume 15% of subtoal.
Engineering and Permitting					$675,314.58	13% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$241,318.80	Assume 10% of subtotal. No biological monitoring required.
Total					**$3,933,118**	

Consumers Energy
Five Channels Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 71,024.00	LF	1,000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 4,188.00	LF	1,775	$ 2.36	$ 4,188.00	Utilize Mead & Hunt opinion
Remove Office buildings/Warehouses	$ 94,462.00	LS	1	$ 94,462.00	$ 94,462.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 4,129.00	STA	7	$ 590.00	$ 4,129.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove piezometers	$ 23,619.00	EACH	10	$ 2,362.00	$ 23,619.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$	$	Included in Engineer baseline studies
Remove turbines	$ 162,344.00	Tons	613	$ 265.00	$ 162,344.00	Utilize Mead & Hunt opinion
Remove generators	$ 26,484.00	Tons	100	$ 265.00	$ 26,484.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove hoists	$ 3,178.00	Tons	12	$ 265.00	$ 3,178.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,277,590.00	CY	11,000	$ 207.00	$ 2,277,590.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 16,155.00	Tons	61	$ 265.00	$ 16,155.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,399,337.00	CY	11,588	$ 207.00	$ 2,399,337.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove hoist rail/platform	$ 1,854.00	Tons	7	$ 265.00	$ 1,854.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,119.00	Tons	8	$ 265.00	$ 2,119.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 212-acre reservoir	$ 883,073.00	LS	1	$ 883,073.00	$ 883,073.00	Utilize Mead & Hunt opinion
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 309,598.00	CY	10,910	$ 14.64	$ 309,598.00	Utilize M&H unit cost. Assume 3:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 24,846.00	CY	87	$ 207.00	$ 24,846.00	Utilize M&H unit cost. Pronste M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments: Dam pilot channel dredging	$ 1,628,169.00	CY	137,872	$ 7.09	$ 977,512.48	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 5,310,604.00	CY	751,970	$ 7.09	$ 5,331,467.39	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 749,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel (not pronsied since reservoir extents under the partial removal option are not anticipated to be wider than that of the full removal channel extents). Secondary tributary connections = 400 LF, assume 50' width dredged, 4' depth avg = 3,970 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment.
Seed former reservoir bottom	$ 209,461.00	AC	167	$ 3,100.00	$ 517,700.00	Mead and Hunt unit cost seems low at about $1,185/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3.1k/AC. upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	167	$ 3,072.00	$ 513,024.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $5.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 7,608.00	LF	8,000	$ 5.00	$ 40,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5,000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	6,716	$ 333.33	$ 2,238,644.28	28,390 LF main channel; 400 LF tributary tie-in. Assume 3H:1V, assume 6' bank, 2' embedment max, 35° thickness CSD = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hand channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 17,816.00	LF	26,864	$ 54.33	$ 1,459,521.12	28,390 LF main channel; 400 LF tributary tie-in. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.3' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	900,752	$ 8.00	$ 7,206,016.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	167	$ 6,700.00	$ 1,118,900.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	13,185	$ 150.00	$ 1,977,777.78	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 650' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $760/CY. Pile cost included.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Installation of Fish Passage	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
Miscellaneous Items						
Salvage Value	$ (39,230.00)	LS	1	$ (39,230.00)	$ (39,230.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	1 Boat Launch; 1 Canoe Portage, 3 Fishing Access Locations; approximately 3 private boat docks. To be evaluated. No costs included.
Subtotal	**$17,196,485**				**$30,069,494**	
Contingency					$3,006,949.40	Assume 10% of subtotal
Owner's Cost					$4,510,424.09	Assume 15% of subtotal
Engineering and Permitting					$1,452,432.29	Assume 3.5% of subtotal + $400k for weir/fish ladder design.
Construction Management & Biological Monitoring					$601,389.88	Assume 2% of subtotal
Total					**$39,640,690**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Move Substation	$ 742,985.00	LS	1	$ 742,985.00	$ 742,985.00	Utilize Mead & Hunt opinion
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 4,011.00	LF	1700	$ 2.36	$ 4,011.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 1,770.00	STA	3	$ 590.00	$ 1,770.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove piezometers	$ 16,533.00	EACH	7	$ 2,362.00	$ 16,533.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 197,568.00	Tons	746	$ 265.00	$ 197,568.00	Utilize Mead & Hunt opinion
Remove generators	$ 34,429.00	Tons	130	$ 265.00	$ 34,429.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove trash rack rake system	$ 3,708.00	Tons	14	$ 265.00	$ 3,708.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove hoists	$ 3,178.00	Tons	12	$ 265.00	$ 3,178.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,484,643.00	CY	12000	$ 207.00	$ 2,484,643.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove gates	$ 18,539.00	Tons	75	$ 265.00	$ 18,539.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 3,970,253.00	CY	19175	$ 207.00	$ 3,970,253.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,119.00	Tons	8	$ 265.00	$ 2,119.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 1627-acre reservoir	$ 891,478.00	LS	1	$ 891,478.00	$ 891,478.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	$ 1,021,747.00	CY	69800	$ 14.64	$ 1,021,747.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	$ 171,854.00	CY	830	$ 207.00	$ 171,854.00	Utilize Mead & Hunt opinion
Remove accumulated sediments: Dam pilot channel dredging	$ 1,625,949.00	CY	137684	$ 7.09	$ 976,179.56	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 15,657,847.00	CY	2226000	$ 7.09	$ 15,782,340.00	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 2,269,400 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections = 2,375 LF, assume 50' width dredged, 4' depth avg = 17,800 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 236,106.00	LS	2	$ 118,053.00	$ 236,106.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (>40') being greater than vertical reach of hydraulic dredge (26').
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment.
Seed former reservoir bottom	$ 1,709,396.00	AC	1469	$ 3,100.00	$ 4,553,900.00	Mead and Hunt unit cost seems low at about $1,165/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3,240/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	1469	$ 3,072.00	$ 4,512,768.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 13,314.00	LF	14000	$ 5.00	$ 70,000.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	19558	$ 333.33	$ 6,519,268.14	66,520 LF main channel; 2,375 LF tributary. Assume 2H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 65% hard channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 163,717.00	LF	78232	$ 54.33	$ 4,250,344.56	66,520 LF main channel; 2,375 LF tributary. M&H erosion mat unit cost was low at $6.24/ SY. Assume 2H:1V, assume 2 bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add 2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	2433484	$ 8.00	$ 19,467,872.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	1469	$ 6,700.00	$ 9,842,300.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	16889	$ 150.00	$ 2,533,333.33	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 1140' length, 2' depth of riffle material.
Miscellaneous Items						
Salvage Value	$ (45,075.00)	LS	1	$ (45,075.00)	$ (45,075.00)	Utilize Mead & Hunt opinion

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Maintain recreation features	$ -	LS	1	$ -	$ -	To be evaluated. No cost included. 4 Boat Launches, 1 Canoe Portage, 2 Fishing Access locations, 3 Swim Areas, approximately 10 private boat docks
Subtotal	**$32,637,073**				**$79,181,260**	
Contingency					$7,918,125.96	Assume 10% of subtotal
Owner's Cost					$11,877,188.94	Assume 15% of subtotal
Engineering and Permitting					$2,771,344.09	Assume 3.5% of subtotal
Construction Management & Biological Monitoring					$1,583,625.19	Assume 2% of subtotal
Total					**$103,331,544**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Non-Power Operation

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site						
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Powerhouse						
Precast concrete stoplogs	$ 204,766.00	CY	315	$ 650.00	$ 204,766.00	Utilize Mead & Hunt opinion
Water conduit sand	$ 65,347.00	CY	4100	$ 16.00	$ 65,347.00	Utilize Mead & Hunt opinion
Safety measures	$ 76,751.00	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Spillway gate modification to maintain flow/pond level	$ 88,558.00	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Reservoir Water Quality Enhancements	$ -	LS	1	$ -	$ -	To be evaluated. Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Installation of fish passage	$ -	VLF	41	$ 50,000.00	$ 2,050,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (672') to 3' below downstream water elevation (634').
Subtotal	**$528,704**				**$2,573,980**	
Contingency					$257,398.00	Assume 10% of subtotal.
Owner's Cost					$386,097.00	Assume 15% of subtotal.
Engineering and Permitting					$916,393.30	15% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$257,398.00	Assume 10% of subtotal. No biological monitoring required.
Total					**$4,391,266**	

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Move Substation	$ 742,985.00	LS	1	$ 742,985.00	$ 742,985.00	Utilize Mead & Hunt opinion
Remove lines from plant to substation	$ 71,024.00	LF	1000	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion
General Site						
Remove security fencing	$ 4,011.00	LF	1700	$ 2.36	$ 4,011.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 1,770.00	STA	3	$ 590.00	$ 1,770.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove piezometers	$ 16,533.00	EACH	7	$ 2,362.00	$ 16,533.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove turbines	$ 197,568.00	Tons	746	$ 265.00	$ 197,568.00	Utilize Mead & Hunt opinion
Remove generators	$ 34,429.00	Tons	130	$ 265.00	$ 34,429.00	Utilize Mead & Hunt opinion
Remove cranes	$ 5,032.00	Tons	19	$ 265.00	$ 5,032.00	Utilize Mead & Hunt opinion
Remove trash rack rake system	$ 3,708.00	Tons	14	$ 265.00	$ 3,708.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove hoists	$ 3,178.00	Tons	12	$ 265.00	$ 3,178.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,484,643.00	CY	12000	$ 207.00	$ 2,484,643.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove gates	$ 18,539.00	Tons	75	$ 265.00	$ 18,539.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 3,970,253.00	CY	19175	$ 207.00	$ 3,970,253.00	Utilize Mead & Hunt opinion
Remove gates	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,119.00	Tons	8	$ 265.00	$ 2,119.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 1627-acre reservoir	$ 891,478.00	LS	1	$ 891,478.00	$ 891,478.00	Utilize Mead & Hunt opinion
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 388,059.00	CY	30295	$ 14.64	$ 443,518.80	Utilize M&H unit cost. Assume 2:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 50,728.00	CY	360	$ 207.00	$ 74,565.54	Utilize M&H unit cost. Pronste M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments: Dam pilot channel dredging	$ 1,625,949.00	CY	137684	$ 7.09	$ 976,179.56	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 15,657,847.00	CY	1977198	$ 7.09	$ 14,018,335.65	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 2,269,400 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Pronste at $8.9% to account for no dredging within new impoundment. Secondary tributary connections +1,800 LF, assume 50' width dredged, 4' depth avg.= 14,000 CY
Remove accumulated sediments: Reservoir Mobilization/Demobilization	$ 236,106.00	LS	2	$ 118,053.00	$ 236,106.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (+40') being greater than vertical reach of hydraulic dredge (30').
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment.
Seed former reservoir bottom	$ 1,709,396.00	AC	1368	$ 3,100.00	$ 4,240,800.00	Mead and Hunt unit cost seems low at about $1,165/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3.3/LF/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	1368	$ 3,072.00	$ 4,202,496.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 2-2' high).
Apply Erosion Control Measures: Silt Fence	$ 13,314.00	LF	14000	$ 5.00	$ 70,000.00	M&H assume $0.95/LF. Seems low by a factor of 5.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	17328	$ 333.33	$ 5,775,942.24	61,430 LF main channel; 1,890 LF tributary. Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness OSD = 15" riprap). 2.22 CY/LF bank, $150/CY. Assume 10% hard channel structure banks but all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 163,717.00	LF	69312	$ 54.33	$ 3,765,720.96	61,430 LF main channel; 1,890 LF tributary. Main erosion risk zone = 5,000 max flow = 30,240 CF. Assume 3H:1V, assume 2' bank (1.5' per LF), add 35% to jute mat for anchor. Jute Mat = $2.04/SY; Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/recused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	2145177	$ 8.00	$ 17,161,418.06	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	1368	$ 6,700.00	$ 9,165,600.00	Grading and reworking of newly exposed sediments within reservoir.
Channel creation: Riffle section at downstream tie in	$ -	CY	12741	$ 150.00	$ 1,911,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 660' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $758/CY. Pile cost included.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Installation of Fish Passage	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
Miscellaneous Items						
Salvage Value	$ (45,075.00)	LS	1	$ (45,075.00)	$ (45,075.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	4 Boat Launches, 1 Canoe Portage, 2 Fishing Access Locations, 3 Swim Areas, approximately 10 private boat docks. To be evaluated - no cost included.
Subtotal	**$31,882,259**				**$72,745,041**	
Contingency					$7,274,504.09	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
Owner's Cost					$10,911,756.14	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
Engineering and Permitting					$2,946,076.43	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal + $400K for weir/fish ladder design.
Construction Management & Biological Monitoring					$1,454,900.82	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
Total					**$95,332,278**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Foote Dam
pecommissioning Cost Evaluation - Full Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 4,261.00	LF	60	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion. Quantity is low compared to that of other dams.
General Site						
Remove security fencing	$ 10,618.00	LF	4500	$ 2.36	$ 10,618.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 21,235.00	STA	36	$ 590.00	$ 21,235.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove piezometers	$ 37,790.00	EACH	16	$ 2,362.00	$ 37,790.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in engineer baseline studies.
Remove turbines	$ 198,097.00	Tons	748	$ 265.00	$ 198,097.00	Utilize Mead & Hunt opinion
Remove generators	$ 74,949.00	Tons	283	$ 265.00	$ 74,949.00	Utilize Mead & Hunt opinion
Remove cranes	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove diesel generator	$ 532.00	Tons	2	$ 266.00	$ 532.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,394.00	Tons	9	$ 266.00	$ 2,394.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/hallrace retaining walls, and aprons)	$ 2,463,938.00	CY	11900	$ 207.00	$ 2,463,938.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 15,360.00	Tons	58	$ 265.00	$ 15,360.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,000,360.00	CY	11630	$ 207.00	$ 2,407,410.00	M&H used a unit cost for this item that does not match the unit cost used for reinforced concrete demolition of other structures. $207/CY is the unit cost typically used for this item.
Remove gates	$ 6,600.00	Tons	30	$ 220.00	$ 6,600.00	Utilize Mead & Hunt opinion
Remove hoist rails/platform	$ 1,547.00	Tons	7	$ 221.00	$ 1,547.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,100.00	Tons	5	$ 220.00	$ 1,100.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 1702-acre reservoir	$ 1,560,417.00	LS	1	$ 949,360.00	$ 949,360.00	Utilize Mead & Hunt opinion. Adjust WSP cost for intake stop log price. M&H used a unit cost for this item that does not match the unit cost used for other dams. $850/CY matches that of other dams.
Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	$ 2,956,918.00	CY	202000	$ 14.64	$ 2,956,918.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	$ 362,344.00	CY	1750	$ 207.00	$ 362,344.00	Utilize Mead & Hunt opinion
Demolish/remove entire earth dam, core wall, and emergency spillway: Sheet piling removal	$ 30,673.00	SF	13000	$ 2.36	$ 30,673.00	Utilize Mead & Hunt opinion
Remove accumulated sediments: Dam pilot channel dredging	$ 16,426,599.00	CY	1390991	$ 7.09	$ 9,862,126.19	Utilize M&H quantity and Kiewit unit cost.
Remove accumulated sediments: Reservoir dredging	$ 10,528,551.00	CY	1536080	$ 7.09	$ 10,890,807.20	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 1,485,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Secondary tributary connections = 6,895 LF, assume 50' width dredged, 4' depth avg = 51,000 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (>40') being greater than vertical reach of hydraulic dredge (35').
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment.
Seed former reservoir bottom	$ 1,781,624.00	AC	1503	$ 3,100.00	$ 4,659,300.00	Mead and Hunt unit cost seems low at about $1,185/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3,240/AC, upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	1503	$ 3,072.00	$ 4,617,216.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 480 plants per acre at $6.40 per plant (#2 container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 13,790.00	LF	14500	$ 5.00	$ 72,500.00	Adjusted unit cost per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	23830	$ 333.33	$ 7,943,253.90	52,680 LF main channel; 6,895 LF tributary tie-ins. Assume 3H:1V, assume 6' bank, 2' embedment max, 36" thickness OSO = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hard channel structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 168,532.00	LF	95320	$ 54.33	$ 5,178,735.60	52,680 LF main channel, 6,895 LF tributary tie-ins. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% for jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	3129071	$ 8.00	$ 25,032,568.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	1503	$ 6,700.00	$ 10,070,100.00	Grading and reworking of newly exposed sediments within reservoir.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Channel creation: Riffle section at downstream tie in	$ -	CY	15556	$ 150.00	$ 2,333,333.33	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 1050' length, 2' depth of riffle material.
Sea Lamprey Control/Fish Pass System	$ -	LS	1	$ 2,000,000.00	$ 2,000,000.00	To be evaluated. $2M placeholder.
Miscellaneous Items						
Salvage Value	$ (62,930.00)	LS	1	$ (62,930.00)	$ (62,930.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	4 Boat Launches, 1 Canoe Portage, 3 Marinas, 2 Fishing Access Locations, 3 Swim Areas, approximately 10 private boat docks.
Subtotal	**$42,358,324**				**$93,168,028**	
Contingency					$9,316,802.82	Assume 10% of subtotal
Owner's Cost					$13,975,204.23	Assume 15% of subtotal
Engineering and Permitting					$3,260,880.99	Assume 3.5% of subtotal
Construction Management & Biological Monitoring					$1,863,360.56	Assume 2% of subtotal
Total					**$121,584,277**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Foote Dam
Decommissioning Cost Evaluation - Non-Power Operation

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
General Site						
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Powerhouse						
Precast concrete stoplogs	$ 127,410.00	CY	196	$ 650.00	$ 127,410.00	Utilize Mead & Hunt opinion
Water conduit and cavity sand	$ 15,141.00	CY	950	$ 15.94	$ 15,141.00	Utilize Mead & Hunt opinion
Safety measures	$ 76,751.00	LS	1	$ 76,751.00	$ 76,751.00	Utilize Mead & Hunt opinion
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove or lay-up equipment: Disable generating capacity	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Remove or lay-up equipment: Remove electrical equipment	$ 23,615.00	LS	1	$ 23,615.00	$ 23,615.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Spillway gate modification to maintain flow/pond level	$ 88,558.00	LS	1	$ 88,558.00	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir /River Channel						
Reservoir Water Quality Enhancements	$ -	LS	1	$ -	$ -	To be evaluated. Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Installation of fish passage	$ -	VLF	48	$ 50,000.00	$ 2,400,000.00	Assume $50,000 per vertical foot head drop and assume going from normal reservoir water elevation (637) to 3' below downstream water elevation (589').
Subtotal	**$401,142**				**$2,796,418**	
Contingency					$279,641.80	Assume 10% of subtotal.
Owner's Cost					$419,462.70	Assume 15% of subtotal.
Engineering and Permitting					$936,655.63	15% =impact study=$400k for fish ladder design + $5k for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$279,641.80	Assume 10% of subtotal. No biological monitoring required.
Total					**$4,711,820**	

Consumers Energy
Foote Dam
Decommissioning Cost Evaluation - Partial Removal

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Substation						
Remove lines from plant to substation	$ 4,261.00	LF	60	$ 71.00	$ 71,024.00	Utilize Mead & Hunt opinion. Quantity is low compared to that of other dams.
General Site						
Remove security fencing	$ 10,618.00	LF	4500	$ 2.36	$ 10,618.00	Utilize Mead & Hunt opinion
Remove plant access road	$ 21,235.00	$TA	36	$ 590.00	$ 21,235.00	Utilize Mead & Hunt opinion
Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808.00	$ 11,808.00	Utilize Mead & Hunt opinion
Survey site for env. contamination	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove piezometers	$ 37,790.00	EACH	16	$ 2,362.00	$ 37,790.00	Utilize Mead & Hunt opinion
Powerhouse						
Survey for contaminants	$ 2,362.00	LS	1	$ -	$ -	Included in Engineer baseline studies
Remove turbines	$ 198,097.00	Tons	748	$ 265.00	$ 198,097.00	Utilize Mead & Hunt opinion
Remove generators	$ 74,949.00	Tons	283	$ 265.00	$ 74,949.00	Utilize Mead & Hunt opinion
Remove cranes	$ 7,945.00	Tons	30	$ 265.00	$ 7,945.00	Utilize Mead & Hunt opinion
Remove diesel generator	$ 532.00	Tons	2	$ 266.00	$ 532.00	Utilize Mead & Hunt opinion
Remove fixtures	$ 1,324.00	Tons	5	$ 265.00	$ 1,324.00	Utilize Mead & Hunt opinion
Remove hoists	$ 2,394.00	Tons	9	$ 266.00	$ 2,394.00	Utilize Mead & Hunt opinion
Remove electrical equipment	$ 64,943.00	LS	1	$ 64,943.00	$ 64,943.00	Utilize Mead & Hunt opinion
Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	$ 2,463,938.00	CY	11900	$ 207.00	$ 2,463,938.00	Utilize Mead & Hunt opinion
Remove trash racks	$ 3,973.00	Tons	15	$ 265.00	$ 3,973.00	Utilize Mead & Hunt opinion
Remove valves	$ 1,059.00	Tons	4	$ 265.00	$ 1,059.00	Utilize Mead & Hunt opinion
Remove gates	$ 15,360.00	Tons	58	$ 265.00	$ 15,360.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates						
Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	$ 2,000,360.00	CY	11630	$ 207.00	$ 2,407,410.00	M&H used a unit cost for this item that does not match the unit cost used for reinforced concrete demolition of other structures. $207/CY is the unit cost typically used for this item.
Remove gates	$ 6,600.00	Tons	30	$ 220.00	$ 6,600.00	Utilize Mead & Hunt opinion
Remove hoist rails/platform	$ 1,547.00	Tons	7	$ 221.00	$ 1,547.00	Utilize Mead & Hunt opinion
Remove hoists	$ 1,100.00	Tons	5	$ 220.00	$ 1,100.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel						
Drain 1702-acre reservoir	$ 1,560,417.00	LS	1	$ 949,360.00	$ 949,360.00	Utilize Mead & Hunt opinion. Adjust WSP cost for intake stop log price. M&H used a unit cost for this item that does not match the unit cost used for other dams. $850/CY matches that of other dams.
Demolish/remove portion of earth dam to create sufficient breach: Excavation	$ 208,960.00	CY	45305	$ 14.64	$ 663,265.20	Utilize M&H unit cost. Assume 3:1 slope from top of weir to top of existing earth dam embankment.
Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	$ 18,635.00	CY	392	$ 207.00	$ 81,144.00	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	$ 307.00	SF	2912	$ 2.36	$ 6,872.32	Utilize M&H unit cost. Prorate M&H full removal quantity with partial removal of earth dam.
Remove accumulated sediments: Dam pilot channel dredging	$ 16,426,599.00	CY	1390991	$ 7.09	$ 9,862,126.19	Utilize M&H quantity and Kleast unit cost.
Remove accumulated sediments: Reservoir dredging	$ 10,528,551.00	CY	1536080	$ 7.09	$ 10,890,807.20	Assumes dredging 200' wide main channel is re-established with limited dredging. Assume 1,465,000 CY (from M&H opinion) required to remove fine grain sediments and re-establish channel. Not prorated because 6 FT weir will not create new impoundment. Secondary tributary connections = 6,895 LF, assume 50' width dredged, 4' depth avg = 51,080 CY.
Remove accumulated sediments: Mobilization/Demobilization	$ 118,077.00	LS	1	$ 118,077.00	$ 118,077.00	Utilize Mead & Hunt opinion. M&H assume two different mobilizations because of depth of reservoir (>40') being greater than vertical reach of hydraulic dredge (20').
Contaminated Sediments - Removal	$ -	CY	0	$ 7.09	$ -	Low risk for contaminated sediments in this impoundment.
Contaminated Sediments - Disposal	$ -	Tons	0	$ 70.00	$ -	Low risk for contaminated sediments in this impoundment.
Seed former reservoir bottom	$ 1,781,624.00	AC	1503	$ 3,100.00	$ 4,659,300.00	Mead and Hunt unit cost seems low at about $1,355/acre. Only acreage outside of dredged channels will need to be seeded. Wet meadow seed mix will be approximately $3.1K/AC; upland seed mixes will be slightly less.
Plant former reservoir bottom	$ -	AC	1503	$ 3,072.00	$ 4,617,216.00	Acreage outside of dredged channels. No quantity from M&H opinion. Assume 490 plants per acre at $6.40 per plant (40' container, 1-2' high).
Apply Erosion Control Measures: Silt Fence	$ 13,790.00	LF	14500	$ 5.00	$ 72,500.00	Unit cost adjusted per similar projects.
Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	CY	5000	$ 150.00	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
Bank Stabilization: Hard Structure	$ 1,769,586.00	LF	23830	$ 333.33	$ 7,943,253.90	52,880 LF main channel; 6,895 LF tributary tie-ins. Assume 3H:1V, assume 6" bank, 2' embedment max, 30° thickness D30 = 15" riprap, 2.22 CY/LF bank, $150/CY. Assume 20% hand chemical structure banks for all banks.
Bank Stabilization: Live stakes and Jute Matting	$ 168,532.00	LF	95320	$ 54.33	$ 5,178,735.60	52,880LF main channel; 6,895 LF tributary tie-ins. M&H erosion mat unit cost was low at $0.24/ SY. Assume 3H:1V, assume 3' bank (1.5' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add 2 CY/LF riprap/mossed cobble at $150/CY for jute mat anchor). Assume 80% of all banks will have this type of stabilization.
Reuse (grading) of non-contaminated excavated and dredged material	$ -	CY	2972376	$ 8.00	$ 23,779,008.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
Grading & Surface Preparation/Amendments	$ -	AC	1503	$ 6,700.00	$ 10,070,100.00	Grading and reworking of newly exposed sediments within reservoir.

Scope Item	Mead & Hunt Estimate Cost	Unit	WSP Quantity	WSP Unit Cost	WSP Opinion of Cost	WSP Notes
Channel creation: Riffle section at downstream tie in	$ -	CY	14074	$ 150.00	$ 2,111,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 950' length, 2' depth of riffle material.
Concrete Weir Installation	$ -	LF	200	$ 5,050.00	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
Installation of Fish Passage	$ -	VLF	9	$ 50,000.00	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
Miscellaneous Items						
Salvage Value	$ (62,930.00)	LS	1	$ (62,930.00)	$ (62,930.00)	Utilize Mead & Hunt opinion
Maintain recreation features	$ -	LS	1	$ -	$ -	4 Boat Launches, 1 Canoe Portage, 3 Marinas, 2 Fishing Access Locations, 3 Swim Areas, approximately 10 private boat docks. To be evaluated. No cost included.
Subtotal	**$39,236,291**				**$88,553,593**	
Contingency					$8,855,359.25	Assume 10% of subtotal
Owner's Cost					$13,283,038.88	Assume 15% of subtotal
Engineering and Permitting					$3,499,375.74	Assume 3.5% of subtotal + $400K for weir/fish ladder design.
Construction Management & Biological Monitoring					$1,771,071.85	Assume 2% of subtotal
Total					**$115,962,438**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Complete Removal

Structure	Scope Item	Mead & Hunt Estimate Decomissioing Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Remove Substation	$ 36,114.00		LS	1	$ 36,114.00	Utilize Mead & Hunt opinion
	Remove lines from plant to substation	$ 3,551.00		LF	50	$ 3,551.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 1,180.00		LF	500	$ 1,180.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00		LS	1	$ 11,808.00	Utilize Mead & Hunt opinion
	Removal of right downstream sheet pile wall	$ 7,550.00	$ 2.36	SF	3,200	$ 7,552.00	Utilize Mead & Hunt opinion
	Remove piezometers	$ 14,171.00		Each	6	$ 14,171.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 218,548.00		LS	1	$ 218,548.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 714,956.00	$ 207.00	CY	3,453	$ 714,771.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 6,356.00		TON	24	$ 6,356.00	Utilize Mead & Hunt opinion
	Remove gates	$ 3,973.00		TON	15	$ 3,973.00	Utilize Mead & Hunt opinion
	Remove sheet pile	$ 7,904.00	$ 40.00	SF	3,350	$ 134,000.00	Unit cost obtained from Hardy Dam Kiewit estimate
Spillway and Spill Gates	Demolish and remove concrete	$ 323,004.00	$ 207.00	CY	1,560	$ 322,920.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 11,918.00		TON	45	$ 11,918.00	Utilize Mead & Hunt opinion
	Remove gate hoist	$ 4,502.00		TON	17	$ 4,502.00	Utilize Mead & Hunt opinion
	Remove rails	$ 344.00		TON	2	$ 344.00	Utilize Mead & Hunt opinion
	Remove sheet pile	$ 16,988.00	$ 2.36	SF	7,200	$ 16,992.00	Unit cost obtained from Hardy Dam Kiewit estimate
Earth Dam and Reservoir/River Channel	Spillway operation for draining	$ 236,186.00		MONTH	50	$ 236,186.00	Utilize Mead & Hunt opinion
	Intake stoplogs	$ 87,757.00		CY	135	$ 87,757.00	Utilize Mead & Hunt opinion
	Cofferdam and diversion for draining	$ 371,974.00		LS	1	$ 371,974.00	Utilize Mead & Hunt opinion
	Wetlands monitoring program	$ 236,186.00		MONTH	50	$ 236,186.00	Utilize Mead & Hunt opinion
	Remove earth dam	$ 313,990.00	$ 14.64	CY	21,450	$ 314,028.00	Unit cost obtained from Hardy Dam Kiewit estimate
	New bridge	$ 3,357,000.00		LS	1	$ 4,327,480.00	Calculated in bridge estimate
	Roadway reconstruction	$ 106,269.00		LS	1	$ 89,160.00	Calculated in bridge estimate
	Remove contaminated soil(Superfund Site)		$ 7.09	CY	1,098,886	$ 7,791,101.74	Assume $7.09/CY removal and 12" depth; assume 50% contamination across entire reservoir requires removal.
	Remove accumulated non-contaminated sediments	$ -	$ 7.09	CY	262,624	$ 1,862,002.32	Additional dredging to create channel, tributory connections and remove fine grained material. Assume $7.09/CY for removal.
	Disposal of contaminated soil		$ 70.00	TON	1,897,007	$ 132,790,483.13	Assume $70/ton disposal cost from Kiewit estimate.
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	$ 8.00	CY	284,074	$ 2,272,589.93	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$ -	$ 6,700.00	ACRE	1,541	$ 10,324,700.00	Grading and surface preparation/soil amendments for newly exposed sediments within reservoir.
	Channel creation - Riffle Section at downstream tie in	$ -	$ 150.00	CY	7,407	$ 1,111,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 500' length, 2' depth of riffle material.
	Seed former reservoir bottom	$ 1,625,612.00	$ 3,100.00	ACRE	1,541	$ 4,777,100.00	Assume entire impoundment bottom less newly created channels is seeded.
	Plant former reservoir bottom		$ 3,072.00	ACRE	1,541	$ 4,733,952.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant
	Apply Erosion Control Measures: Silt Fence	$ 26,628.00	$ 5.00	LF	28,000	$ 140,000.00	Adjust unit cost to $5/LF.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5,000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Bank Stabilization - Hard Structure		$ 333.33	LF	11,738	$ 3,912,560.87	Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ 139,641.00	$ 54.53	LF	66,514	$ 3,627,019.33	Assume 3H:1V, assume 3' bank (1 SY per LF); add 30% to jute mat for anchor, Jute Mat = $2.84/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Subtotal	**$9,653,696**				**$181,264,091**	
	Contingency					$4,847,360.83	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$7,271,041.24	Assume 15% of subtotal excluding cost of contaminated sediment disposal.
	Engineering and Permitting					$1,696,576.29	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal.
	Construction Management & Biological Monitoring					$969,472.17	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$196,048,542**	

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Impoundment restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed impoundment bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Non Power Operation

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Powerhouse	Leave powerhouse intact	$ 338,549.00		LS		$ 338,549.00	Utilize Mead & Hunt opinion
	Remove or lay up equipment	$ 88,558.00		LS		$ 88,558.00	Utilize Mead & Hunt opinion
Spillway and Spill Gates	Modify spillway to maintain flow/pond level	$ 88,558.00		CY	1560	$ 88,558.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Installation of fish passage		$ 50,000.00	VLF	19	$ 950,000.00	Assume $50,000/VLF.
	Subtotal	**$515,665**				**$1,465,665**	
	Contingency					$146,566.50	Assume 10% of subtotal.
	Owner's Cost					$219,849.75	Assume 15% of subtotal.
	Engineering and Permitting					$869,078.28	15% +impact study+$400k for fish ladder design + $5K for environmental contaminants survey (do not need to survey reservoir).
	Construction Management					$146,566.50	Assume 10% of subtotal. No biological monitoring required.
	Total					**$2,847,726**	

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Mead & Hunt Estimate Decomissioing Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Remove Substation	$ 36,114.00		LS	1	$ 36,114.00	Utilize Mead & Hunt opinion
	Remove lines from plant to substation	$ 3,551.00		LF	50	$ 3,551.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 1,180.00		LF	500	$ 1,180.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00		LS	1	$ 11,808.00	Utilize Mead & Hunt opinion
	Removal of right downstream sheet pile wall	$ 7,550.00	$ 2.36	SF	3200	$ 7,552.00	Utilize Mead & Hunt opinion
	Remove piezometers	$ 14,171.00		Each	6	$ 14,171.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 218,548.00		LS	1	$ 218,548.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 714,956.00	$ 207.00	CY	3453	$ 714,771.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 6,356.00		TON	24	$ 6,356.00	Utilize Mead & Hunt opinion
	Remove gates	$ 3,973.00		TON	15	$ 3,973.00	Utilize Mead & Hunt opinion
	Remove sheet pile	$ 7,904.00	$ 40.00	SF	3350	$ 134,000.00	Unit cost obtained from Hardy Dam Kiewit estimate
Spillway and Spill Gates	Demolish and remove concrete	$ 323,004.00	$ 207.00	CY	1560	$ 322,920.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 11,918.00		TON	45	$ 11,918.00	Utilize Mead & Hunt opinion
	Remove gate hoist	$ 4,502.00		TON	17	$ 4,502.00	Utilize Mead & Hunt opinion
	Remove rails	$ 344.00		TON	1.5	$ 344.00	Utilize Mead & Hunt opinion
	Remove sheet pile	$ 16,988.00	$ 2.36	SF	7200	$ 16,992.00	Unit cost obtained from Hardy Dam Kiewit estimate
Earth Dam and Reservoir/River Channel	Drain Reservoir	$ 932,103.00		LS	1	$ 932,103.00	Utilize Mead & Hunt opinion
	Remove portion of earth dam to create sufficient breach	$ 313,990.00	$ 14.64	CY	1090	$ 15,957.60	Unit cost obtained from Hardy Dam Kiewit estimate
	New bridge	$ 3,327,000.00		LS	1	$ 4,327,480.00	Calculated in bridge estimate. Updated using 2022 MDOT template.
	Roadway reconstruction	$ 106,269.00		LS	1	$ 89,160.00	see bridge estimate
	Remove contaminated soil(Superfund Site)		$ 7.09	CY	1098886	$ 7,791,101.74	Assume $7.09/CY removal and 12" depth; assume 50% contamination across entire reservoir requires removal.
	Remove accumulated non-contaminated sediments	$ -	$ 7.09	CY	188977	$ 1,339,844.01	Established new impoundment footprint based on permissible depth with 6' weir in place. Assumed all sediments above this to remain in place and reworked. Assumed depth of 6" is dredged within the new footprint to remove fine grain material. Prorated at 70.9% to account for no dredging within new impoundment footprint. 1,288 LF tributary tie-ins.
	Disposal of contaminated soil		$ 70.00	TON	1897007	$ 132,790,483.13	Assume $70/ton disposal cost from Kiewit estimate.
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	$ 8.00	CY	190067	$ 1,520,532.70	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$ -	$ 6,700.00	ACRE	828	$ 5,547,600.00	Grading and reworking of newly exposed sediments within reservoir.
	Channel creation - Riffle Section at downstream tie in	$ -	$ 150.00	CY	7407	$ 1,111,111.11	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 500' length, 2' depth of riffle material.
	Seed former reservoir bottom	$ 1,625,612.00	$ 3,100.00	ACRE	828	$ 2,566,800.00	Assume entire newly exposed bottom is seeded.
	Plant former reservoir bottom		$ 3,072.00	ACRE	828	$ 2,543,616.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant
	Concrete weir installation	$ -	$ 5,050.00	LF	200	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6' drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Fish Passage	$ -	$ 50,000.00	VLF	9	$ 450,000.00	Assume 6 FT drop from weir + 3 FT below downstream water elevation.
	Apply Erosion Control Measures: Silt Fence	$ 26,628.00	$ 5.00	LF	28000	$ 140,000.00	Unit cost adjusted to $5/LF.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Bank Stabilization - Hard Structure		$ 333.33	LF	8429	$ 2,809,771.90	Assume 3H:1V, assume 6' bank, 2' embeddment max, 30" thickness D50 = 15" riprap, 2.22 CY/LF bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ 139,641.00	$ 54.53	LF	47767	$ 2,604,712.70	Assume 3H:1V, assume 3' bank (1.57 per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Subtotal	**$9,653,696**				**$169,848,974**	
	Contingency					$3,705,949.09	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$5,558,773.63	Assume 15% of subtotal excluding cost of contaminated sediment disposal
	Engineering and Permitting					$1,697,047.18	Assume 1.5% of subtotal excluding cost of contaminated sediment disposal + $400K for weir/fish ladder design.
	Construction Management & Biological Monitoring					$741,169.82	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$181,551,814**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infractructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Consumers Energy
Webber Dam
Decommissioning Cost Evaluation - Full Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Remove Substation	$ 60,190.00		LS	1	$ 60,190.00	Utilize Mead & Hunt opinion
	Remove lines from plant to substation	$ 14,205.00		LF	200	$ 14,205.00	Utilize Mead & Hunt opinion
General Site	Remove security fencing	$ 1,180.00		LF	900	$ 1,180.00	Utilize Mead & Hunt opinion
	Remove plant access road	$ 1,180.00		LF	200	$ 1,180.00	Utilize Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00		LS		$ 11,808.00	Utilize Mead & Hunt opinion
	Remove piezometers	$ 16,533.00		EACH	7	$ 16,533.00	Utilize Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 256,625.00		LS	1	$ 256,625.00	Utilize Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 1,325,143.00	$ 207.00	CY	6400	$ 1,324,800.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 5,297.00		TON	20	$ 5,297.00	Utilize Mead & Hunt opinion
	Remove gates	$ 15,625.00		TON	59	$ 15,625.00	Utilize Mead & Hunt opinion
Spillway and Spill gates	Demolish and remove concrete	$ 1,935,951.00	$ 207.00	CY	9350	$ 1,935,450.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 15,890.00		TON	60	$ 15,890.00	Utilize Mead & Hunt opinion
	Remove walkway and hoist rails	$ 17,214.00		TON	65	$ 17,214.00	Utilize Mead & Hunt opinion
	Remove hoists	$ 4,237.00		TON	16	$ 4,237.00	Utilize Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Drain Reservoir	$ 1,452,145.00		LS	1	$ 1,452,145.00	Utilize Mead & Hunt opinion
	Remove earth dam: excavation	$ 901,714.00	$ 14.64	CY	61600	$ 901,824.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove earth dam: concrete demolition	$ 12,091.00	$ 207.00	CY	580	$ 120,060.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Dam pilot channel	$ 1,457,517.00	$ 7.00	CY	136970	$ 971,117.32	Unit cost obtained from comparable WSP projects
	River dredging	$ 7,149,870.00	$ 7.00	CY	1016390	$ 7,149,485.32	Unit cost obtained from comparable WSP projects
	Remove contaminated soil	$ -	$ 7.00	CY	106480	$ 754,943.20	assume 12" dredging depth; assume 10% of reservoir requires dredging of contaminated sediment, dependent on sediment characterization
	Disposal of contaminated soil	$ -	$ 70.00	TON	183816	$ 12,867,149.68	Use $70/ton disposal cost from Kiewit estimate.
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	$ 8.00	CY	1206960	$ 9,655,680.00	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$ -	$ 6,700.00	ACRE	343	$ 2,298,100.00	Grading and reworking of newly exposed sediments within reservoir.
	Channel creation - Riffle Section at downstream tie in	$ -	$ 150.00	CY	14815	$ 2,222,250.00	Excavation & dredging costs captured above. This item for placement of river rock through riffle section. Assume 200' width, 1000' length, 2' depth of riffle material.
	Mobilization/Demobilization	$ 98,087.00		LS	1	$ 98,087.00	Utilize Mead & Hunt opinion
	Seed former reservoir bottom	$ 1,773,438.00	$ 3,100.00	ACRE	343	$ 1,063,300.00	Seeding of newly exposed reservoir bottom.
	Plant former reservoir bottom	$ -	$ 3,072.00	ACRE	343	$ 1,053,696.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1-2' high, $6.40/plant (Source; DEWA Class A Avg.)
	Apply Erosion Control Measures: Silt Fence	$ 20,922.00	$ 5.00	LF	22000	$ 110,000.00	Unit cost adjusted per similar projects.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Bank Stabilization - Hard Structure	$ -	$ 333.33	LF	4347	$ 1,449,085.51	Assume 3H:1V; assume 6" bank, 2' embedment max, 30" thickness, 250 = 15" riprap, 2.22 CY/LF bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ -	$ 54.53	LF	24835	$ 1,343,330.14	Assume 3H:1V, assume 2' bank (1.5' per cY), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47 each, 4 stakes per SY, add .2 CY/LF riprap/reused cobble at $150/CY for jute mat anchor)
	Salvage Value	$ (59,129.00)	$ (59,129.00)	LS	1	$ (59,129.00)	Utilize Mead & Hunt opinion
	Subtotal	**$18,476,440**				**$47,940,487**	
	Contingency					$3,507,333.73	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$5,261,000.60	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Engineering and Permitting					$1,227,566.81	Assume 3.5% of subtotal excluding cost of contaminated sediment disposal.
	Construction Management & Biological Monitoring					$701,466.75	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$58,637,855**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

Comsumers Hydropower
Webber Dam
Decommissioning Cost Evaluation

Scope Item	Mead & Hunt Estimate Decomissioing Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Leave powerhous intact	$ 320,606.00				$ 320,606.00	Utilize Mead & Hunt opinion
Remove or lay up equipment	$ 88,564.00				$ 88,564.00	Utilize Mead & Hunt opinion
Modify spillway to maintain flow/pond level	$ 88,558.00		CY	1560	$ 88,558.00	Utilize Mead & Hunt opinion
Installation of fish passage		$ 50,000.00	VLF	0	$ -	Fish ladders already installed at Weber Dam.
Subtotal	**$177,122**				**$177,122**	
Contingency					$17,712.20	Assume 10% of subtotal.
Owner's Cost					$26,568.30	Assume 15% of subtotal.
Engineering and Permitting					$264,746.27	1.5% + impact study + $5K for environmental contaminants survey (do not need to survey reservoir).
Construction Management					$17,712.20	Assume 10% of subtotal. No biological monitoring required.
Total					**$503,861**	

Consumers Energy
Webber Dam
Decommissioning Cost Evaluation - Partial Removal

Structure	Scope Item	Mead & Hunt Estimate Decommissioning Cost	WSP Unit Cost Opinion	Unit	Quantity	WSP Opinion of Cost	WSP Notes
Substation	Remove Substation	$ 60,390.00	$ 60,190.00	LS	1	$ 60,190.00	Zilliox Mead & Hunt opinion
	Remove fence from plant to substation	$ 14,205.00	$ 71.00	LF	200	$ 14,205.00	Zilliox Mead & Hunt opinion
General Site	Remove security fencing	$ 1,180.00	$ 2.00	LF	500	$ 1,180.00	Zilliox Mead & Hunt opinion
	Remove plant access road	$ 1,180.00	$ 590.00	STA	2	$ 1,180.00	Zilliox Mead & Hunt opinion
	Remove septic tank/drain field	$ 11,808.00	$ 11,808.00	LS	1	$ 11,808.00	Zilliox Mead & Hunt opinion
	Remove piezometers	$ 16,533.00	$ 2,362.00	EACH	7	$ 16,533.00	Zilliox Mead & Hunt opinion
Powerhouse	Remove all powerhouse equipment	$ 256,625.00		LS		$ 256,625.00	Zilliox Mead & Hunt opinion
	Demolish and remove concrete/masonry	$ 1,325,143.00	$ 207.00	CY	6400	$ 1,324,800.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove trash racks	$ 5,287.00		TON	20	$ 5,287.00	Zilliox Mead & Hunt opinion
	Remove gates	$ 15,625.00		TON	59	$ 15,625.00	Zilliox Mead & Hunt opinion
Spillway and Spill gates	Demolish and remove concrete	$ 1,835,951.00	$ 207.00	CY	9350	$ 1,935,450.00	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove gates	$ 15,890.00		TON	60	$ 15,890.00	Zilliox Mead & Hunt opinion
	Remove walkway and hoist rails	$ 17,214.00		TON	65	$ 17,214.00	Zilliox Mead & Hunt opinion
	Remove hoists	$ 4,237.00		TON	16	$ 4,237.00	Zilliox Mead & Hunt opinion
Earth Dam and Reservoir/River Channel	Drain Reservoir	$ 1,452,145.00		LS	1	$ 1,452,145.00	Zilliox Mead & Hunt opinion
	Remove portion of earth dam: excavation	$ 160,224.00	$ 14.64	CY	9605	$ 140,617.20	Unit cost obtained from Hardy Dam Kiewit estimate
	Remove portion of earth dam: concrete demolition	$ 18,463.00	$ 207.00	CY	90	$ 18,729.36	Unit cost obtained from Hardy Dam Kiewit estimate
	Dam pilot channel	$ 1,617,517.00	$ 7.09	CY	136970	$ 971,117.32	Unit cost obtained from comparable WSP projects
	Remove accumulated non-contaminated sediments	$ 7,149,870.00	$ 7.09	CY	675621	$ 4,790,155.52	No existing bathymetry available, historic bathymetry indicates original channel was 188' wide. Assumed same 200' channel as full removal option. Assumed all sediments above this to remain in place and reworked. Assumed depth of 6" is dredged within the new footprint to remove fine grain material. Provided at 67% to account for no dredging within new impoundment area.
	Remove contaminated soil	$ -	$ 7.09	CY	106480	$ 754,943.20	assume 12" dredging depth; assume 30% of reservoir requires dredging of contaminated sediment, dependent on sediment characterization
	Disposal of contaminated soil	$ -	$ 70.00	TON	183816	$ 12,867,149.68	$ 70/ton disposal cost from Kiewit estimate.
	Mobilization/Demobilization	$ 98,087.00	$ 98,087.00	LS	1	$ 98,087.00	Zilliox Mead & Hunt opinion
	Channel creation - Riffle Section at downstream tie in	$ -	$ 150.00	CY	14815	$ 2,222,250.00	Excavation & dredging cost is captured above. This item for placement of river rock through riffle section. Assume 200' width x100' length, 2' depth of riffle material.
	Reuse (grading) of non-contaminated excavated & dredged material	$ -	$ 8.00	CY	822196.3	$ 6,577,570.40	Additional effort to grade/rework material excavated/dredged for specific habitat creation.
	Grading & surface preparation/amendments	$ -	$ 6,700.00	ACRE	293	$ 1,963,100.00	Grading and reworking of newly exposed sediments within reservoir.
	Seed former reservoir bottom	$ 1,773,438.00	$ 3,100.00	ACRE	293	$ 908,300.00	Seeding of newly exposed reservoir bottom.
	Plant former reservoir bottom	$ -	$ 3,072.00	ACRE	293	$ 900,096.00	Assume 10' OC spacing, 480 plants per acre, #2 container 1'-2' high, $6.40/plant
	Concrete weir installation	$ -	$ 5,050.00	LF	200	$ 1,010,000.00	Assume weir width of 4' and height of 9' (6" drop height + 3' foundation concrete). Assume reinforced marine concrete has a unit cost of $780/CY. Pile cost included.
	Fish Passage	$ -	$ 50,000.00	VLF	9	$ 450,000.00	Assume 6 fish plus 3 feet to tie into downstream section.
	Apply Erosion Control Measures: Silt Fence	$ 20,922.00	$ 5.00	LF	22000	$ 110,000.00	Unit costs adjusted per similar projects.
	Apply Erosion Control Measures: Rip Rap Protection	$ 1,769,586.00	$ 150.00	CY	5000	$ 750,000.00	Extra rip-rap for temporary placement for erosion control. Assume higher unit cost than M&H, but less quantity.
	Bank Stabilization - Hard Structure	$ -	$ 333.33	LF	4347	$ 1,449,085.51	Assume 3H:1V, assume 6' bank, 2' embedment max, 30" thickness D50 =15" riprap, 2.22 CY/LF bank, $150/CY
	Bank Stabilization - Live stakes and Jute Matting	$ 144,456.00	$ 54.53	LF	24635	$ 1,343,330.19	Assume 3H:1V, assume 3' bank (1'-1' per LF), add 30% to jute mat for anchor, Jute Mat = $2.04/SY, Live stakes = $5.47/each, 4 stakes per 1', add 2 CY/LF riprap/grouted cobble at $150/CY for toe mat anchor)
	Salvage Value	$ (59,129.00)	$ (59,129.00)	LS	1	$ (59,129.00)	Zilliox Mead & Hunt opinion
	Subtotal	**$17,860,657**				**$42,397,781**	
	Contingency					$2,253,063.12	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Owner's Cost					$4,429,594.69	Assume 10% of subtotal excluding cost of contaminated sediment disposal.
	Engineering and Permitting					$1,433,572.05	Assume 10% of subtotal excluding cost of contaminated sediment disposal + $400K for weir/fish ladder design.
	Construction Management & Biological Monitoring					$590,612.62	Assume 2% of subtotal excluding cost of contaminated sediment disposal.
	Total					**$51,804,623**	

Notes:
1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

Appendix A

A-3 ECONOMIC MODEL OUTPUTS (WORKBOOKS)



File:	01. Rogers - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

Scenarios

There are three scenarios to relicense and three scenarios to decommission.

The relicense scenarios are: to upgrade the plant (increasing generation), to overhaul (major maintenance, minimal generation increase), and relicensing but not doing any kind of overhaul or upgrade.

The decommission scenarios are: Non-power operation, partial removal, and complete removal.

Timing

New License Term	50 Years
Relicense Studies start on year	2028
Upgrade/overhaul on year	2034

Duration of Decommission Period	between 1 to 5 years depending on the scenario
Decommission starts	year after license expires: 2035 or 2085

Upgrade and Overhaul scenarios - Capital costs

	Relicense 1 (Upgrade)	Relicense 2 (overhaul)	Relicense 3 (maintain)
Capital and maintenance projects needed to maintain the asset (LTFP)	X	X	X
Turbines Upgrades (increase generation)	X		
Capital Overhaul (minimal increase in generation)		X	

Relicense and maintain plant Costs

Assumes implementing certain projects identified in the Long Term Financial Plan that are needed to maintain the current operations, without the intent of increasing the generation, but assuming that the Plant will continue its current operation once the license renovation has been approved.

Decommission costs

Surrender 1 - Non-Power Operation	Surrender 2 - Partial Removal	Surrender 3 - Complete Removal
The existing water-impounding structures would remain intact. The electric generating units and auxiliary equipment would be disabled and laid-up in the powerhouse to prevent generation of electricity. The spillway operation would be modified to pass river flows and maintain the existing reservoir.	- Demolition and removal of specific elements of the project to drain the impoundment and establish a river channel through the project site. - Only the bulk of the embankment dam sections outside of the floodplain would be left intact. - Exposed sediments and shoreline would be stabilized and re-vegetated.	- Demolition and removal of all the dam's structures and result in draining of the impoundment and establishment of a river channel through the dam site. '- Removal of the earth dam sections, concrete spillway, powerhouse, tailrace and retaining walls, and all appurtenant structures. '- During controlled drawdown, hydraulic dredging would be performed to approximate the river's original meander to allow the river to reestablish its course through the reservoir.

Revenue

- Revenue has been considered as the product of the expected generation by the rate projection that Consumers Energy provided, it starts in 2023 at $60.70/MWh and decreases, reaching a value of $30.2908/MWh in the year 2049. The average rate of years (2045 to 2049 has been used for the projection of the subsequent years in the analysis.
- A sensitivity analysis has been performed to analyze the resulting NPV of the revenues considering an escalation of the rate at 3%.
- A Grant of $2.5 million (spread evenly between 2025-2027) has been assumed for the project on the relicense scenarios.

Escalation and discount rates

- Values from the LTFP have been discounted to 2022 Dollars at 7% for values at 2023 and 2024, and at 4% for values in years 2025 and beyond.
- Discount rate for NPV calculation is 7.5%



File:	Hardy - Financial Analysis CE 03.13.2023.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.



File:	03. Croton - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.



File:	04. Hodenpyl - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.



File:	05. Tippy - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.



File:	06. Mio - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.

File:	07. Alcona - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.



File:	08. Loud - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The Cell F5 of the tab InpC is the selector of the scenario. The data in Column F show the data of the corresponding scenario, which is extracted from the data in Columns M to Q
	Lines 130 to 138 can be used to calculate NPVs based on considering variations to some key inputs (sensibilities)
	Similarly, data in the InpR tab is for all scenarios, but the only data used to calculate correspond to the data of the selected scenario
	The tab NPV shows the result of the selected scenario in cell H16. A macro named "Scenarios" can be run and it will populate the NPV of all scenarios in cells F20 to F29.
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

File:	09. Five channels - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

File:	10. Cooke - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

File:	11. Foote - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

File:	12. Calkins - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

File:	13. Webber - Financial Analysis CE Assumptions 6.1.2023 40%.xlsm
Client:	Consumers Energy
Project:	CEC Hydro Strategy Road Map
Content of this file:	Preliminary Financial Model to evaluate relicense and Surrender alternatives
Date submitted:	20-Jun-23
Instructions:	
	The outcome of this model is the Net Present Value (NPV) of the expected Expenses and Revenue Cashflows, in a long term life-cycle analysis of several scenarios of relicense or decommission of the plant.
	The inputs for the model are in tabs InpC, InpR, and Escalation assumptions are in the Esc Tab.
	- Only the Yellow cells can be modified
	The tab Assumptions and Key info detail some of the most relevant assumptions of the model. More assumptions are seen in the yellow cells of tabs InpC, InpR, Esc and Time.

APPENDIX

B SITE SUMMARIES

APPENDIX B.1

Rogers Dam
FERC No. P-2451

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Three earth embankment dam sections (one section 48 feet high and two sections 40 feet high), each with a concrete core wall and totaling 600 feet long.
- A 40-foot-high, 156-foot-long concrete spillway with six steel radial gates, a defunct log chute, and a concrete-lined discharge channel extending approximately 100 feet downstream.
- A reservoir with a normal surface area of 449 acres at elevation 861.6 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 4,678 acre-feet.
- Reservoir shoreline spans approximately 21.3 miles and contains an estimated 200+ private parcels with riparian frontage, Mecosta Township Ulrich Park, and two MDNR managed boat launches.
- A concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 5,418 kilowatts (kW).
- A 20-foot-long concrete apron with retaining walls in the powerhouse tailrace.
- Associated appurtenant structures.



Relicensing

- Major license (referenced in License Order, subject to form L-3)
- Non-compliance allegations related to operations of Rogers to maintain run-of-river operations downstream of Croton so as not to require a gaging station upstream of Rogers dam.
- Operational compliance with run-of-river
- Sedimentation of upper end of reservoir
- Northern Long Eared Bat & Kerner Blue butterfly potential
- Moderate private development along shoreline

Future License Conditions

- Operations monitoring/automation
- Water quality monitoring
- RTE Species Management Plans
- Recreation enhancements
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan

Risks to Operating under another 50-year License

- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Rogers Hydroelectric Dam 2021 Powerhouse Condition Assessment Results,” the interior of the powerhouse was given a rating of 'Green' for the main level, indicating that no major repairs will be needed for another 10 to 20 years, and a rating of 'Orange' for the lower levels, indicating that major repairs may be needed after another 1 to 3 years. The ‘Orange’ rating for the lower levels can be attributed to cracking and spalling of the columns on the fourth floor; it was recommended that these columns be repaired as soon as practical, and that sister columns be evaluated and installed in the interim. Because the extent of concrete cracking on the exterior of the Powerhouse is unknown, the exterior was given a rating of 'Orange;' it was recommended that a more detailed investigation is performed.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder Associates Inc. (Golder) on September 25 and 30, 2018, and consisted of the above-

water concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Right Embankment Retaining Wall, Downstream Powerhouse Pier, Left Spillway Abutment, Left Wing Wall/Abutment, Log Chute, Right Spillway Abutment, Right Wing Wall/Abutment, Spillway, Piers, and Weir, Upper Downstream Left Embankment Retaining Wall - Segment 1, Upper Downstream Left Embankment Retaining Wall - Segment 2, and Upstream Spillway Piers). The report for this condition assessment is dated May 14, 2019. The downstream left embankment retaining wall, downstream right embankment retaining wall, and Upper Downstream Left Embankment Retaining Wall - Segment 1 were rated 'BLUE' indicating that major repairs may be needed within 5 to 10 years. The rest of the structures mentioned here were rated 'GREEN' indicating that major repairs are not expected to be needed for about 10 to 20 years.

The concrete feature ratings were based on above-water observations only. It was recommended to perform an underwater investigation of each feature and adjusting the ratings accordingly.

Another report by Golder dated March 21, 2019 was prepared after performing a non-destructive visual condition assessment of the spillway abutment walls located downstream of the spillway structure and the spillway apron on August 9, 2018. The Spillway Abutment Right Wall sloping section (from Sta. 1+20 to 2+50) was given an "ORANGE" rating, indicating major repairs may be necessary after 1 to 3 years. The segment between Sta. 0+00 and 2+50 was rated 'YELLOW' indicating major repairs may be necessary after 3 to 5 years. The Left Wall footing (Sta. 0+00 to 2+50) was rated "BLUE" and the vertical portion of the Left Wall was rated "GREEN". These structures/features were not included in the May 14, 2019 report.

On August 6, 2019, Golder performed a separate Phase 2 non-destructive visual condition assessment on the spillway left and right abutment walls and apron. During this assessment, concrete coring activities on the right abutment wall and the left abutment wall footing were going on to help estimate the depth of concrete deterioration in support of the future spillway wall repair project. Golder conducted a second site visit on August 30, 2019. The summary of these assessments are contained in Technical Memorandum dated November 4, 2019. Based on the findings of this report, Apron Slabs 3, 4, and 6 were rated 'ORANGE' while Apron Slabs 1 and 2 were rated 'GREEN'.

DIVE INSPECTION

- May 13, 2021, Downstream Spillway Inspection
    - Large 10 ft x 30 ft scour depression d/s of sheet pile wall d/s of tailrace. Depression extends up to 6 ft below hard clay shelf along riverbank – with undermining of hard clay shelf.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement. The exception to this relates to spillway remediation.

There is a recommendation that the stability analysis be updated and improved. If the analyses are still outstanding, it could lead to recommendations for remediation/upgrades to the project.

Current Remediation Projects in LTFP

- Unit 4 Generator Rewind – Capital
- Left Embankment Retaining Wall Replacement – Capital
- Middle Embankment Toe Reverse Filter Installation – Capital
- Right Downstream Retaining Wall Replacement – Capital
- Spillway Chamber Fill – Capital
- Spillway Gates 4, 5, and 6 Replacement – Capital
- Powerhouse Right and Left Embankment Retaining Wall Replacement – Capital
- Embankment Stabilization – Capital
- Apron Inspection (Only exists until new spillway is operational) – O&M
- Powerhouse Basement Concrete Repairs – O&M
- Powerhouse Original Flooring Concrete Repairs – O&M

Remediation Projects not in LTFP

- Core Wall Upgrades
- Head Gates Resealing
- Tailrace Concrete Repairs

FERC Required Spillway Projects (in LTFP)

PMF Project – Capital

- The Muskegon River PMF Study resulted in a flood approximately 9,000 cfs higher than the current peak inflow at Rogers Dam. As a result, Rogers may not be able to pass the PMF. CEC plans to complete an options study to determine what improvements are required to pass the updated PMF at Rogers Dam (i.e. adding spillway bays, increasing core wall height, etc.) and plans to complete these improvements.

Generation

The Rogers development consists of 4 units with a calculated maximum generation capacity of 59,148 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 22,755 MWH, contributing 5% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 43,524 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



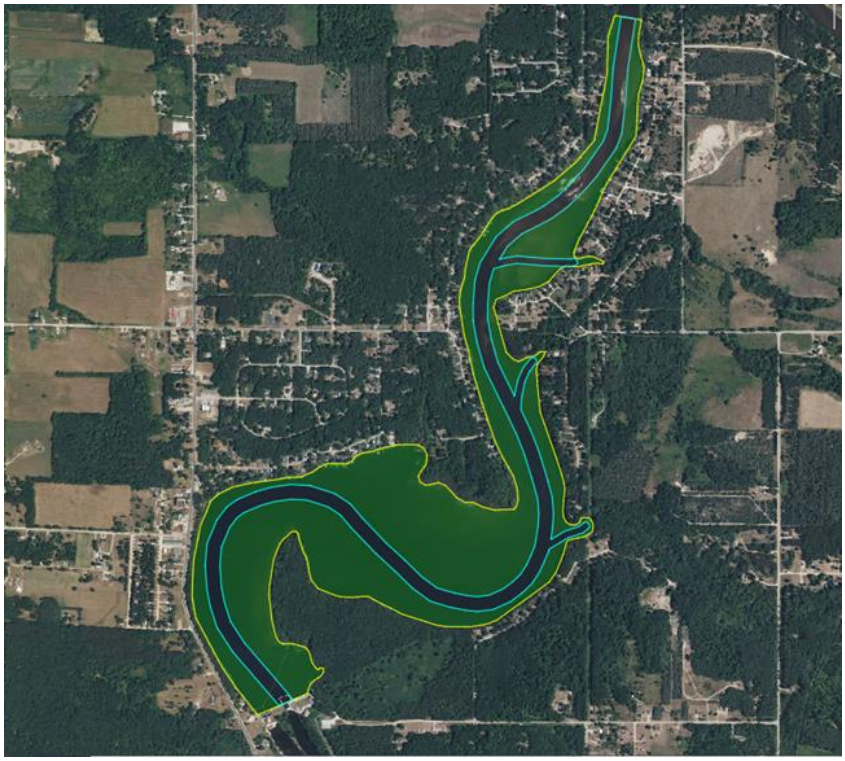
- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates regulatory requirements for run-of-river operation coordination with Croton Dam
  - Eliminates risks of water quality violations in future years from elevated temperatures (not specifically an issue now but thermal loading in Rogers manifests in Hardy and Croton)
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.

- Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
  - 3 inhabited residential properties located along right bank between 300 FT to 700 FT downstream of dam
  - 10 inhabited residential properties located along left bank side at around 3,000 FT downstream of dam
  - S. State Street Bridge approximately 3,000 FT downstream of dam
  - Rt. 131 Bridge approximately 6,300 FT downstream of dam

- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - There are a number (~200+) waterfront private parcels with riparian access that would likely experience shoreline retreat or change as a result of reservoir lowering. Evaluation of proposed conditions critical to early engagement with stakeholders.
    - Mecosta Township Ulrich Park.
    - MDNR manages Mecosta-Big Rapids Township Line Boat Launch & Rogers Height Boat Launch.
    - Evaluate options to perform additional dredging to create tributaries/canals to preserve water access to private properties and recreational facilities or construct new recreational facilities/parks within newly created bottomland/shoreline.
    - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
    - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
    - Under Mead & Hunt assumptions, approximately 499 acres converted from open-water impoundment to a 200' wide channel occupying approximately 75 acres.
  - Baseline studies including sediment characterization and bathymetry are critical to planning and alternative evaluation.
    - Potential contaminants have potential to drive costs considerable if removal is required.

- Sediment characterization would enable planning for future reuse of dredged sediment to create wetlands, transition areas and uplands within newly created riparian corridor.
- Updated bathymetry data would enable preliminary modeling of proposed conditions and impacts to neighboring stakeholders, recreational features and maintaining tributary connections.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates regulatory requirements for run-of-river operation coordination with Croton Dam.
  - Eliminates risks of water quality violations in future years from elevated temperatures (not specifically an issue now but thermal loading in Rogers manifests in Hardy and Croton).
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
- Key Considerations

- Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - There are a number (~200+) waterfront private parcels with riparian access that would likely experience shoreline retreat or change as a result of reservoir lowering. Evaluation of proposed conditions critical to early engagement with stakeholders.
    - Mecosta Township Ulrich Park within buffer zone.
    - MDNR manages Mecosta-Big Rapids Township Line Boat Launch & Rogers Height Boat Launch.
    - Evaluate options to perform additional dredging to create tributaries/canals to preserve water access to private properties and recreational facilities or construct new recreational facilities/parks within newly created bottomland/shoreline.
    - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
    - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
    - Under Mead & Hunt assumptions, approximately 499 acres converted from open-water impoundment to a 200' wide channel occupying approximately 75 acres.
- Baseline studies including sediment characterization and bathymetry are critical to planning and alternative evaluation.
    - Potential contaminants have potential to drive costs considerable if removal is required.
    - Sediment characterization would enable planning for future reuse of dredged sediment to create wetlands, transition areas and uplands within newly created riparian corridor.
    - Bathymetry data would enable preliminary modeling of proposed conditions and impacts to neighboring stakeholders, recreational features and maintaining tributary connections.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden.
    - Minimal changes to existing reservoir. No significant changes to existing environmental, socioeconomic, and recreational conditions.
- Cons/Risks
    - Legal liability associated with facilities/equipment surrendered in place.
    - Maintenance of facilities/equipment.
    - Potential for future takeover by other interested parties.
    - Requires capital improvements to ensure spillway is sufficient, maintained, and in compliance with all current and future regulations with respect to FERC and Michigan dam safety, fish passage, etc.

  - Does not address any currently identified deficiencies or safety/failure concerns.
  - Water quality (temperature and dissolved oxygen (DO)) downstream of Rogers may continue to be an issue and thermal loading in Rogers, although not elevating temperatures above state standards, does contribute to elevated temperatures downstream of Hardy and Croton.
- Key Considerations
  - Evaluate future & current regulatory requirements
  - Fish passage. Michigan DNR 2003 Muskegon River Management Plan, Management Action 13 discusses water quality and fisheries and specifically improving habitat by improving discharges. Management Actions 14 and 15 focus on fisheries protections and enhancements and include providing for fish passage by either dam removal or fish passage devices.
  - FERC & Michigan Dam Safety

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.2

Hardy Dam
FERC No. P-2452

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- A 114-foot-high and 2,600-foot-long earth embankment dam section with a concrete core wall.
- A 600-foot-long fixed-crest emergency spillway with a concrete-lined (for the upper 880 feet) discharge channel.
- A reservoir with a normal surface area of 3,902 acres at elevation 822.0 feet (USGS datum) and a gross storage of 134,973 acre-feet with depths varying 70'-100' within the channel that meanders through the impoundment.
- A steel-framed concrete-and-masonry intake structure with upper and lower intake openings.
- Three concrete penstocks to convey water from the lower intake opening to the intake tower.
- Three steel-lined concrete penstocks to convey water from the intake tower to the powerhouse.
- A steel-framed concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 29,229 kW.
- 200-foot-long concrete apron with retaining walls in the tailrace. 200-foot-long concrete apron with retaining walls in the tailrace.
- Hydro plant is a peaking facility and regulates flow downstream to the Croton Dam.
- Associated appurtenant structures.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Peaking plant reregulated by Croton downstream
- WQ out of compliance for temp and dissolved oxygen (DO)
- Northern Long Eared Bat (Endangered), Tri-Colored Bat (Proposed Endangered) & Kerner Blue butterfly (Endangered), Monarch Butterfly (candidate) potential for studies and mitigation measures
- Listed on National Register of Historic Places (NRHP)
- Considerable Public Recreation Facilities
- Limited private property adjacent to shoreline

Future License Conditions

- Operations monitoring/automation
- Water quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Loss of peaking operations
- Fish passage requirements
- Temperature and potentially DO exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Hardy Hydroelectric Dam 2021 Powerhouse Condition Assessment Results,” Powerhouse and Intake structures were each given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. Although no immediate major repairs are required, it was recommended that several features of the structures are monitored on a regular basis.

OTHER STRUCTURES

The Emergency Spillway, Splash Wall, Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Upstream Embankment Retaining Wall, and Tipping Wall were inspected, and a Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed for each of these structures on September 25 and 28, 2018. Based on this assessment, the emergency spillway and the splash wall were rated as 'YELLOW' (3 to 5 years before major repairs or replacement is necessary). The rest of the structures mentioned here were generally found to be in good condition and were rated 'GREEN', with the recommendation that the joints in the left embankment retaining wall, right embankment retaining wall, and upstream embankment retaining wall be cleaned and sealed. Continuing monitoring the offset joint on both the left and right embankment retaining walls was also recommended to ensure movement is not taking place.

It should be noted that the condition assessment consisted of the above-water concrete features/structures and the concrete feature ratings were based on above-water observations only. It was recommended to perform an underwater investigation of each feature and adjust the ratings accordingly.

Another investigation was conducted by NDT Corporation using nondestructive sonic/ultrasonic Impact Echo (IE) measurements on the steel penstock liner on October 14th, 2020. Due to water leaks noticed externally at the butterfly valve section of this unit, it is suspected there may be voiding between the steel liner and grout behind the liner in the area of 10+/- feet upstream to 30+/- feet downstream of the butterfly valve on the right side of the spill tube.

Based on the Emergency Headgate Condition Assessment Report dated June 2019, the levels of corrosion, pitting, and section loss observed during the inspection were minor, and typically the remaining section measurements were equivalent to or greater than the nominal thickness of the members shown on the drawings. The bridge crane beams were observed to be in good condition and the paint system was intact. No significant defects, corrosion or section loss were observed, so a reduction in capacity should not be applied to the bridge crane beams.

DIVE INSPECTIONS

- May 10, 2022, Water Boils/Rip-Rap Area/West Sheet Pile Wall Inspection
    - 11 active water boils area of boil 'C' downstream (d/s) of tailrace. Pipe driven into ground near boil – no flow in pipe.
    - 15 active boils directly d/s of apron slab, near west sheet pile wall.
- July 23, 2021, Tailrace Inspection
    - 2 boils observed at east-west joint between draft tubes and apron slab – minimal flow through boils.
    - 1 concrete spall was observed on apron slab at east-west construction joint.
    - Weep holes in apron slab (4 weep holes) are active and generally show minimum flow, except for 1 weep hole in the middle slab closest to draft tube, which had 3.5 gpm flow.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement. The exception to this is the recommendation to repair or replace the Hardy auxiliary spillway as it was identified as presenting a dam safety concern. This project is underway and part of the LTFP.

Current Remediation Projects in LTFP

- Right Embankment Toe Drain Header Replacement – Capital
- Left Embankment Toe Drain Header Replacement – Capital
- Canoe Portage Replacement- Capital
- Intake Tower Bridge Replacement – Capital
- Relief Well Area Reverse Filter – Capital
- Reverse Filter – Capital
- Units 1 & 2 Static Exciter Replacement – Capital
- Left and Right Tailrace Steel Sheet Pile Replacement – Capital
- Electrical Safety Project - Capital
- Penstock Expansion Joint Repacking and Refurbishment – O&M
- Stability Stress Analyses for STID Section 8.0 – O&M
- Intake Tower Brick Repair – O&M
- Unit 3 Runner Painting – O&M

Remediation Projects not in LTFP

- Penstock Lining and Cavitation Remediation
- Underwater Trash Gate Remediation
- Potential Upstream Timber Cribbing Remediation

FERC Required Spillway Projects (in LTFP)

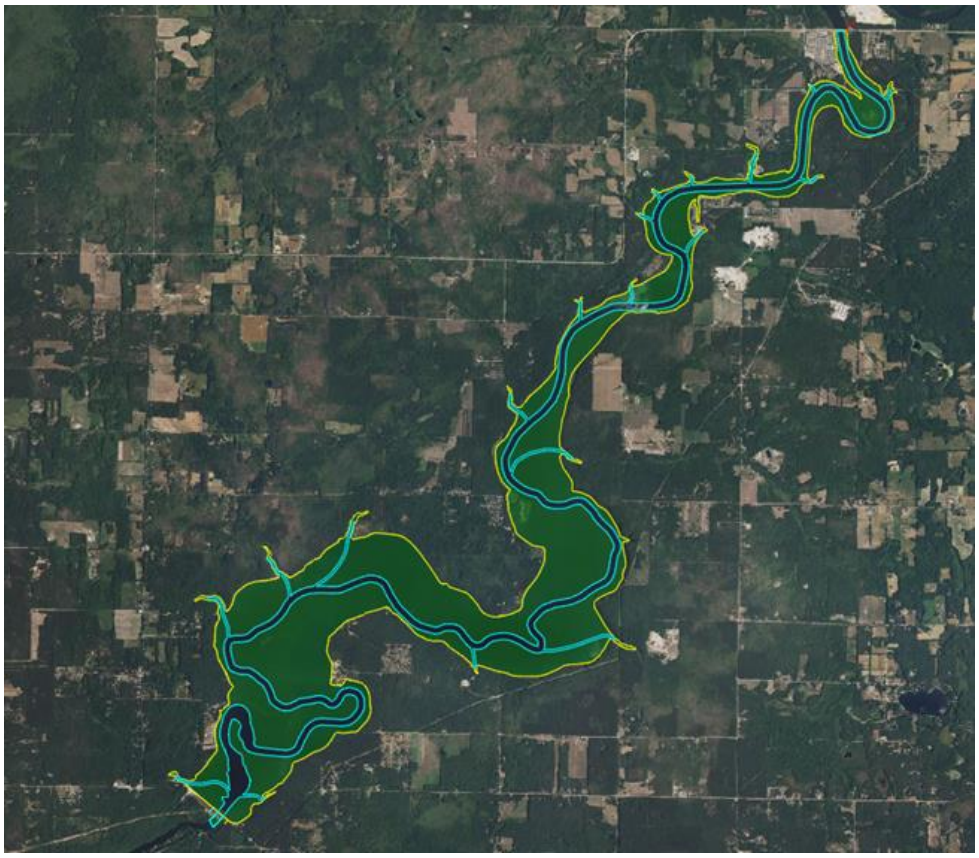
- Auxiliary Spillway Replacement – Capital
    - Findings from the Oroville Dam failure and site risk assessments have led to the determination that the current auxiliary spillway is deficient, deteriorated, and needs to be replaced. CEC plans to build a new auxiliary spillway on the right embankment, away from the powerhouse and spill tubes. This will bring the overall site risk below acceptable risk lines on the established risk map.
- Crest Roadway Replacement and Compaction – Capital
    - The earthen embankment at Hardy has a history of depressions and sinkholes that have formed along the crest of the embankment (generally from rotting or removal of railroad trestle used for original construction) as well loose embankment fill soils. CEC plans to remove the top five feet of embankment soil and replace it in one-foot-thick roller compacted lifts. This project would be completed simultaneously with the Splash Wall Replacement project.
- Splash Wall Replacement – Capital
    - The splash wall and sloping slab, upstream of the road, are deteriorated. The site risk assessment identified the hydraulic barrier (which includes the splash wall and sloping slab) as a component that could reduce risk at the site if improved. CEC plans to replace the deteriorated splash wall and sloping slab and improve the hydraulic barrier which would improve dam safety by addressing overtopping concerns and decreasing the potential for hydraulic loading of the embankment due to leaks through the hydraulic barrier.

Generation

The Hardy development consists of 3 units with a calculated maximum generation capacity of 284,700 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 107,495 MWH, contributing 24% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 145,118 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial Removal)



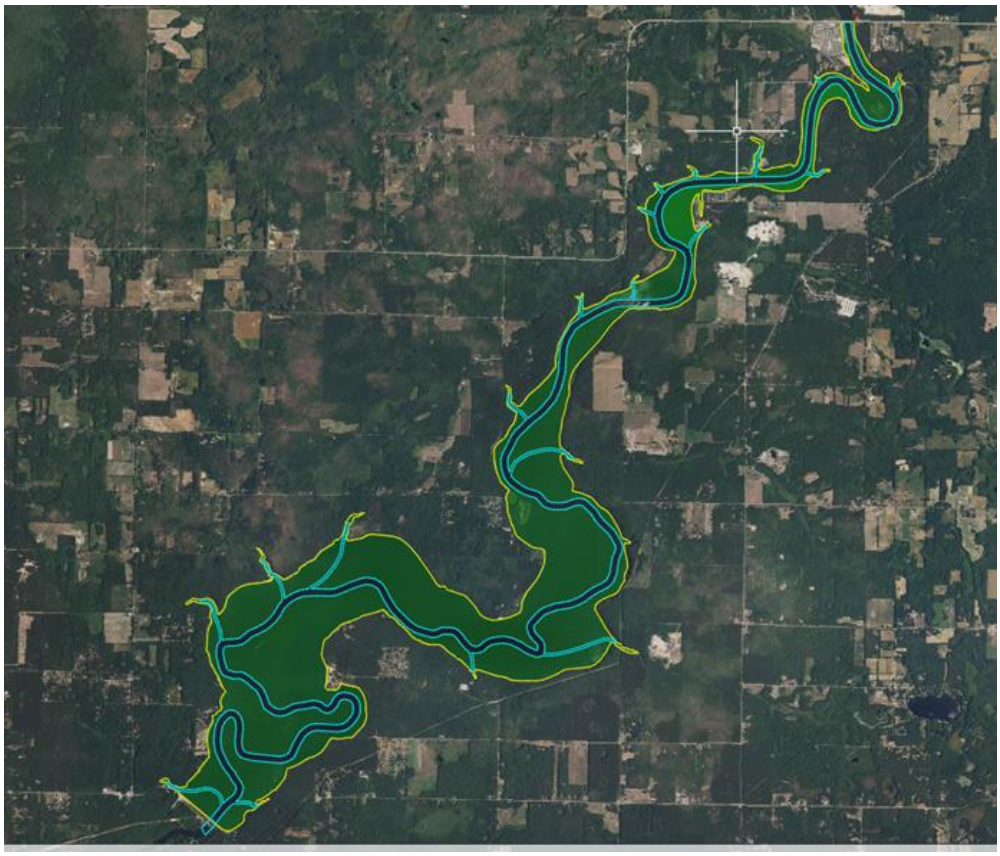
- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Mitigates water quality and fish passage interests from Michigan DNR
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
  - Auxiliary spillway and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.

- Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
  - Several (>30) inhabited residential properties along left bank between 800 FT to 7,000 FT downstream of dam
  - Hardy Dam Recreation Area located approximately 3,000 FT downstream of dam

- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - The majority of reservoir riparian boundary is forested and owned by Consumers, but there are several parks, campgrounds (with dock space), marinas and boat ramps that would likely see significant shoreline retreat.
      - 5 major parks
      - 14 commercial marinas
      - Club and homeowner association uses
      - Individual and group docking sites.
    - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
    - Impoundment depths exceed 100' near the dam with much of the impoundment in the 70'-100'. Restoration options associated with decommissioning should develop alternatives to preserve a target depth/habitat and minimize dredging.
    - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focuses on managing newly created bottom lands to restrict non-public development.
    - Under Mead & Hunt assumptions, approximately 3,902 acres converted from open-water impoundment to a 200' wide channel occupying approximately 620 acres. Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir limits
  - Baseline Studies - Sediment Characterization & Bathymetry
    - Potential for contaminated sediment is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.

- Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features, and aquatic habitat.

Decommissioning (Full Removal)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Mitigates water quality and fish passage interests from Michigan DNR
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.

- The majority of reservoir riparian boundary is forested and owned by Consumers, but there are several parks, campgrounds (with dock space), marinas and boat ramps that would likely see significant shoreline retreat.
    - 5 major parks
    - 14 commercial marinas
    - Club and homeowner association uses
    - Individual and group docking sites.
- Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
- Impoundment depths exceed 100' near the dam with much of the impoundment in the 70'-100'. Restoration options associated with decommissioning should develop alternatives to preserve a target depth/habitat and minimize dredging.
- Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
- Under Mead & Hunt assumptions, approximately 3,902 acres converted from open-water impoundment to a 200' wide channel occupying approximately 620 acres. Significant planning and analysis required to determine how to manage existing recreational features.

- Baseline Studies - Sediment Characterization & Bathymetry
    - Potential for contaminated sediments is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
    - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features, and aquatic habitat.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden.
  - Minimal changes to existing reservoir. No significant changes to existing environmental, socioeconomic, and recreational conditions.
- Cons/Risks
  - Legal liability associated with facilities/equipment surrendered in place.
  - Maintenance of facilities/equipment.
  - Potential for future takeover by other interested parties.
  - Requires capital improvements to ensure spillway is sufficient, maintained, and in compliance with all current and future regulations with respect to FERC and Michigan dam safety, fish passage, etc. Does not address any currently identified deficiencies or safety/failure concerns.
  - Water quality (temperature and potentially DO) may still be out of compliance for cold water fisheries under License Article 405.
- Key Considerations
  - Evaluate future & current regulatory requirements
  - Fish passage. Should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration in the event Croton Dam is also removed.
  - FERC & Michigan Dam Safety

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender. However, the large capital expenditure project of upgrading the spillway will make selling this Project difficult.

APPENDIX B.3

Croton Dam
FERC No. P-2468

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two earth embankment dam sections (one section 53 feet high and one section 19 feet high), each with a concrete core wall.
- A 53-feet-high and 240-feet-long concrete spillway with eight steel radial gates, an overflow weir, and a concrete-lined discharge channel extending approximately 250 feet downstream with a 7-feet-high concrete weir located approximately 53 feet downstream.
- A reservoir with a normal surface area of 1,209 acres at elevation 722.0 feet (USGS datum) and a gross storage of 21,932 acre-feet.
- A concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 7,473 kW.
- A 31-feet-long concrete apron with retaining walls in the tailrace.
- Associated appurtenant structures.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Downstream fish barrier (non-functioning fish ladder)
- Water Quality out of compliance; Upwelling system in place without success.
- Operational compliance (reregulation of Hardy) to run-of-river
- Northern Long Eared Bat (Endangered), Tri-Colored Bat (Proposed Endangered) & Kerner Blue butterfly (Endangered), Monarch Butterfly (candidate) potential for studies and mitigation measures
- Listed on National Register of Historic Places (NRHP)
- Notable number of shoreline property owners and recreation resources which would increase the nature of consultation during relicensing
- Impoundment is ongoing source of thermal pollution to downstream section of Muskegon River. Upwelling system installed in 2009 has not been successful in preventing temperature violations.
- Dam is critical physical barrier to preventing upstream migration of Sea Lamprey and protects roughly 200 miles of the Muskegon River. Dam turbine operation critical to downstream application of lampricide.
- Recreation
    - Public: portage at dam; Tailwater Park and East tailwater access, A.W. duChemin Park, and Croton Township Campground
    - Private: commercial marinas, restaurants, etc.
- Extensive Private residences and managed properties
    - ~500+ private properties on the impoundment with riparian access
    - 80% of impoundment shoreline privately owned

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage/Sea Lamprey exclusion
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirement
- Temperature and potential dissolved oxygen (DO) mitigation
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements
- Outside the life expectancy of generating equipment

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Croton Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The interior and exterior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. Although no immediate major repairs are required, additional maintenance and monitoring will be required in several areas to prevent the need for future repairs. In addition, it is recommended the crane runway capacity be reduced until the cracking observed at the brick columns is investigated further.

OTHER STRUCTURES

A condition assessment report was prepared by Golder (dated May 14, 2019). The assessment was performed on the following site features: Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Downstream Spillway Apron (Exposed), Downstream Triangle, Fixed Crest Spillway – Bear Trap, Left Wing Wall/Abutment, Right Wing Wall/Abutment, Spillway Abutment, Spillway, Piers, and Weir, Training Wall, Upstream Powerhouse Piers, Upstream Spillway Piers, and Upstream Triangle.

The training wall was given YELLOW rating, which corresponds to 3 to 5 years before major repairs or replacement is necessary. The downstream right embankment retaining wall was given a BLUE rating, which corresponds to 5 to 10 years before major repairs or replacement is necessary. The other structures that were assessed were given a GREEN rating, which corresponds to 10 to 20 years before major repairs or replacement is necessary. Maintenance to the site over the years includes spillway modification, penstock repair and tailrace rehabilitation, and left embankment remediation.

DIVE INSPECTIONS

- November 16, 2021, Upstream Spillway Inspection:
  - Two vertical cracks along the concrete divider wall between the powerhouse and spillway.
  - One concrete spall along the western retaining wall.
- October 27, 2021, Downstream Spillway Inspection:
  - The concrete spillway slabs are separated to form upper and lower concrete slabs between the upstream/downstream bear trap construction joints. It is thought that the separation was from the original construction form board that has rotted away.

  - One open construction joint at the concrete divider wall between the spillway and powerhouse.
  - One concrete spall at the downstream end of the intermediate concrete scour slab.
- September 12, 2022, Upstream Powerhouse Inspection:
  - Two concrete spalls along the east concrete retaining wall.
  - Angle irons used for retaining the stop blocks up to 20% deteriorated.
  - One spall at concrete pier between bays 1 and 2.
  - One vertical crack at the west retaining wall.
- September 13, 2022, Downstream Powerhouse Inspection:
  - Two concrete spalls at Draft Tube Bay #4.
  - Zebra mussel shells covered the floor of Draft Tube #3 (2-5 ft thick).
  - One diagonal crack at west retaining wall.
  - Two open construction joints along the downstream concrete scour slab.
  - Once concrete spall at the concrete divider wall between powerhouse & spillway.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Unit 3 Overhaul – Capital
- Training Wall Replacement – Capital
- Spillway Apron Remediation Overlay - Capital
- Auxiliary Generator Replacement – Capital
- Units 1 and 2 Wicket Gate Replacement – Capital
- Units 3 and 4 Thrust Bearing Oil Cooler Replacement – Capital

Remediation Projects not in LTFP

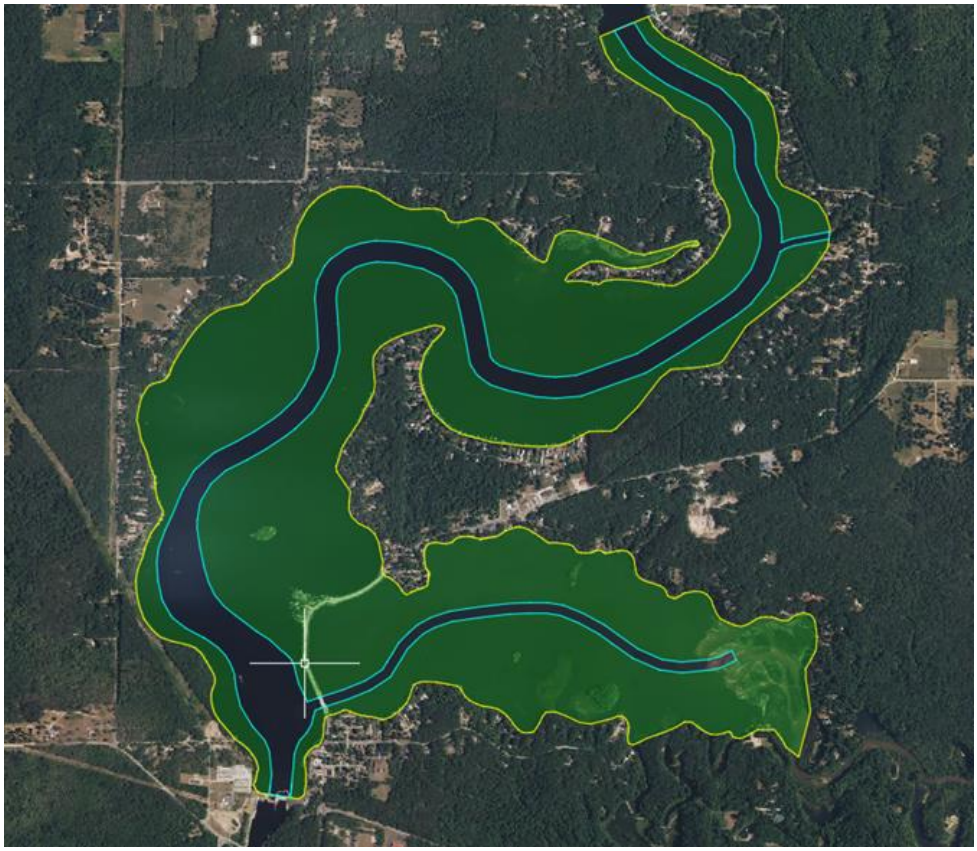
- Units 1 and 2 Steel Liner Remediation
- Headgate Tension Rod Replacement
- Penstock Floor Beam Concrete Remediation
- Penstock Concrete Erosion Remediation
- Dead Bay Leakage Remediation

Generation

The Croton development consists of 4 units with a calculated maximum generation capacity of 77,526 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 34,737 MWH, contributing 8% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 78,617 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)

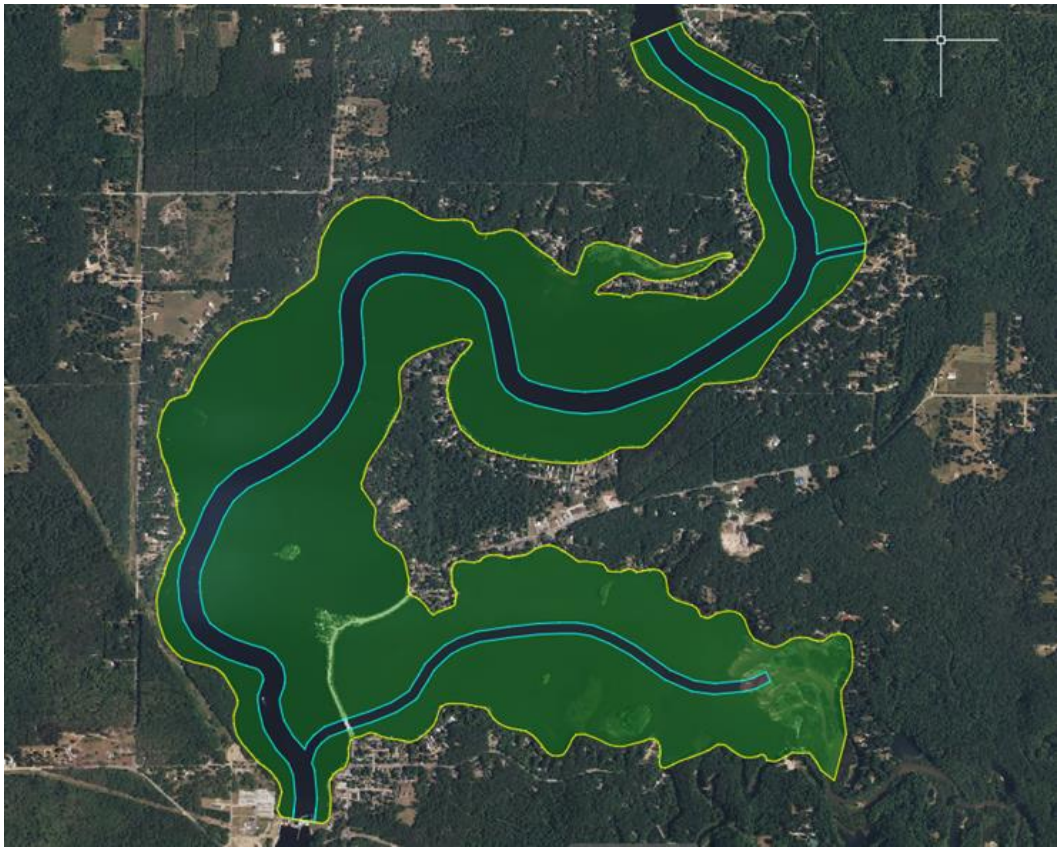


- Pros
  - Reduces legal liability and maintenance required of the existing facilities.
  - Mitigates many of the regulatory requirements associated with the existing spillway & reservoir.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
  - Spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Water quality (temperature and potential DO may still be out of compliance for cold water fisheries under License Article 405.

- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
  - 1 inhabited residential property along left bank approximately 2,400 FT downstream of dam
  - Several (>30) inhabited residential properties along right bank between 4,800 FT to 12,500 FT downstream of dam
  - Croton Drive Bridge approximately 750 FT downstream of dam
  - Happy Campers Campground approximately 1,500 FT downstream of dam

- Key Considerations
  - Evaluate future use of newly created shoreline and bottomland within impoundment.
    - MDNR focus on managing newly created bottomlands to restrict non-public development.
    - Property loss value evaluations for loss in property value for private properties with diminished riparian access. (500+ properties, many with dock space)
    - Under Mead & Hunt assumptions, approximately 925 acres converted from open water impoundment to upland or wetland. Considerations for selective additional dredging to preserve channels in critical areas.
  - Sea Lamprey control and treatment
    - Hydroplant turbines are critical for mixing for lampricide for downstream treatment of Sea Lamprey. Consultation with MDNR on alternative methods recommended. Currently, treatment occurs every 2-4 years at a cost of approximately $1.1M per treatment.
    - Dam is critical physical barrier for blocking upstream migration of Sea Lamprey. The dam protects nearly 200 miles of the Muskegon River. Removal should consider newly constructed barriers to limit upstream migration in consultation with MDNR.
  - Baseline Studies - Sediment Characterization & Bathymetry
    - Potential for contaminated sediments are significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
    - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features and aquatic habitat.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates issues with water quality (temperature and potential DO)
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.

- Key Considerations
    - Evaluate future use of newly created shoreline and bottomland within impoundment.
        - MDNR focus on managing newly created bottomlands to restrict non-public development.
        - Property loss value evaluations for loss in property value for private properties with diminished riparian access. (500+ properties, many with dock space)
        - Under Mead & Hunt assumptions, approximately 925 acres converted from open water impoundment to upland or wetland. Considerations for selective additional dredging to preserve channels in critical areas.
    - Sea Lamprey control and treatment
        - Hydroplant turbines are critical for mixing for lampricide for downstream treatment of Sea Lamprey. Consultation with MDNR on alternative methods recommended.
        - Dam is critical physical barrier for blocking upstream migration of Sea Lamprey. The dam protects nearly 200 miles of the Muskegon River. Removal should consider newly constructed barriers to limit upstream migration in consultation with MDNR.
        - Barrier system should be installed to prevent upstream migration of invasive species (sea lamprey and round goby); refer to FishPass System example by Great Lakes Fishery Commission.
    - Baseline Studies - Sediment Characterization & Bathymetry
        - Potential for contaminated sediments are significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
        - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features and aquatic habitat.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden.
  - Minimal changes to existing reservoir. No significant changes to existing environmental, socioeconomic, and recreational conditions.
- Cons/Risks
  - Legal liability associated with facilities/equipment surrendered in place.
  - Maintenance of facilities/equipment.
  - Potential for future takeover by other interested parties.
  - Requires spillway maintenance and compliance with all current and future regulations with respect to FERC, dam safety, fish passage, etc.
  - Does not address any currently identified deficiencies or safety/failure concerns.
- Key Considerations
  - Evaluate future & current regulatory requirements
    - Fish passage. Should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.
    - Water quality (temperature and potential DO)
      - Water quality may still be out of compliance for cold water fisheries under License Article 405.
    - FERC & Dam safety
    - Evaluate maintenance costs

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.4

Hodenpyl Dam
FERC No. P-2599

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 80-foot-high earth embankment dam sections, each with a concrete core wall.
- An emergency overflow spillway at the north end of the north embankment dam.
- A reservoir with a normal surface area of 1,798 acres at elevation 809.0 feet (USGS datum) and a gross storage of 39,684 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 13,884 kW.
- A 157-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing.
- Water Quality out of compliance; Upwelling system in place without success.
- Run of river operations
- Sedimentation of upper end of reservoir

- Northern Long Eared Bat, Indiana Bat, and Tri-colored Bat (Endangered species mgmt.)
- Very limited private development along shoreline

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- RTE Species Management Plans
- Recreation enhancements
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan

Risks to Operating under another 50-year License

- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Hodenpyl Hydroelectric Dam 2021 Powerhouse Condition Assessment Results,” the powerhouse was given a rating of 'Green', indicating that no major repairs will be needed for another 10 to 20 years. It was recommended that cracked/spalled areas of concrete with exposed steel should be repaired. It was also recommended that several cracked features of the powerhouse are monitored on a regular basis, and any changes documented.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 26, 2018 and consisted of the above-water concrete features/structures consisting of Asphalt-Lined Emergency Spillway, Downstream Powerhouse Piers and Abutments, East Wall, Upper Left Embankment Retaining Wall, Lower Left Embankment Retaining Wall, Right Embankment Retaining Wall Section, Upper Right Embankment Retaining Wall, Upstream Powerhouse Piers. The findings are summarized in a report dated May 14, 2019. All features/ structures that were assessed were given a ‘GREEN’ rating indicating that major repairs will not be needed for about 10 to 20 years. The concrete feature ratings were based on above-water observations only. It was recommended to perform an underwater investigation of each feature and to adjust the ratings and remaining life estimates accordingly.

A focused Spillway Assessment Report prepared by AECOM (dated December 21, 2017) indicates that based on field observations (performed on August 9 and 10, 2017) the emergency spillway structure was in satisfactory condition. No immediate corrective actions are required to protect public safety or the project works. However, updated stability analysis

for the emergency spillway concurrently with the updated embankment stability analysis is recommended by AECOM, along with other potential analyses related to the internal erosion potential failure mode in relation with the asphalt surfacing at the emergency spillway. In addition, continuing visual monitoring at the toe of the emergency spillway was recommended for the seepage observed through the cracks near the toe.

DIVE INSPECTIONS

- June 21, 2017, Tailrace Inspection
  - No defects
- June 20, 2017, Intake Structure Inspection
  - West section trash-rack steel at Bays #2 and #1 'knife-edged' with 5-10% deterioration.
  - Vertical concrete spall at construction joint between west wing wall and west retaining wall at bay #2 (54 inches tall, 15 inches wide, 10 inches deep), no exposed steel identified.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement; however, the recommended review of rating curves, freeboard calculations and analyses of the right embankment could lead to recommendations for remediation/upgrades to the project.

Current Remediation Projects in LTFP

- Unit 1 Generator Rewind – Capital
- Downstream Wall Replacement – Capital
- Spill Gate and Head Gate Hoist Replacement – Capital
- Left Abutment Cut-off Wall Replacement – Capital
- Core Wall Replacement - Capital
- Geotechnical and Stability Analyses – O&M

Remediation Projects not in LTFP

- Right Abutment Flow Remediation
- Unit 2 Overhaul
- Right Intake Wing Wall
- Powerhouse Structural Projects (Caterpillar Gates, Draft Tubes, etc.)

FERC Required Spillway Projects (in LTFP)

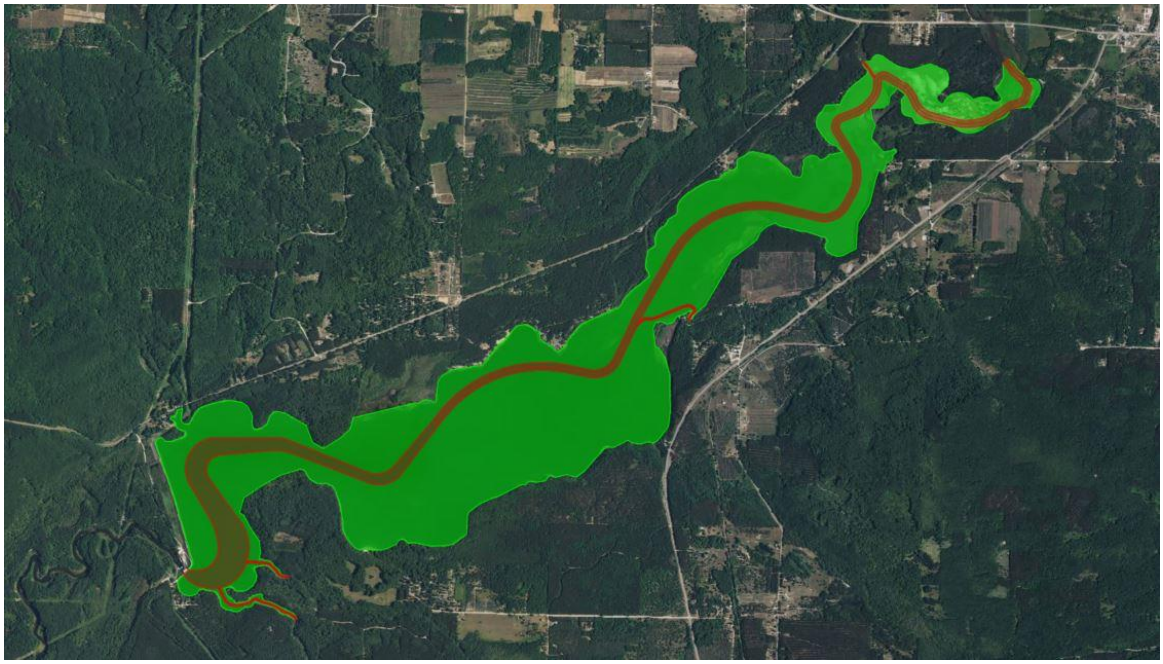
- Emergency Spillway Replacement – Capital
    - The existing emergency spillway would overtop during a PMF event, failure of the emergency spillway is likely due to lack of flow dissipaters and scour protection at the bottom, and risk drivers are associated with the emergency spillway. CEC plans to replace the emergency spillway by raising the crest, replacing the asphalt, and installing flow dissipators which would allow Hodenpyl Dam to pass the PMF without activating the emergency spillway and bring the overall site risk below the acceptable risk lines on the risk map.

Generation

The Hodenpyl development consists of 4 units with a calculated maximum generation capacity of 148,920 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 48,522 MWH, contributing 11% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 107,990 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

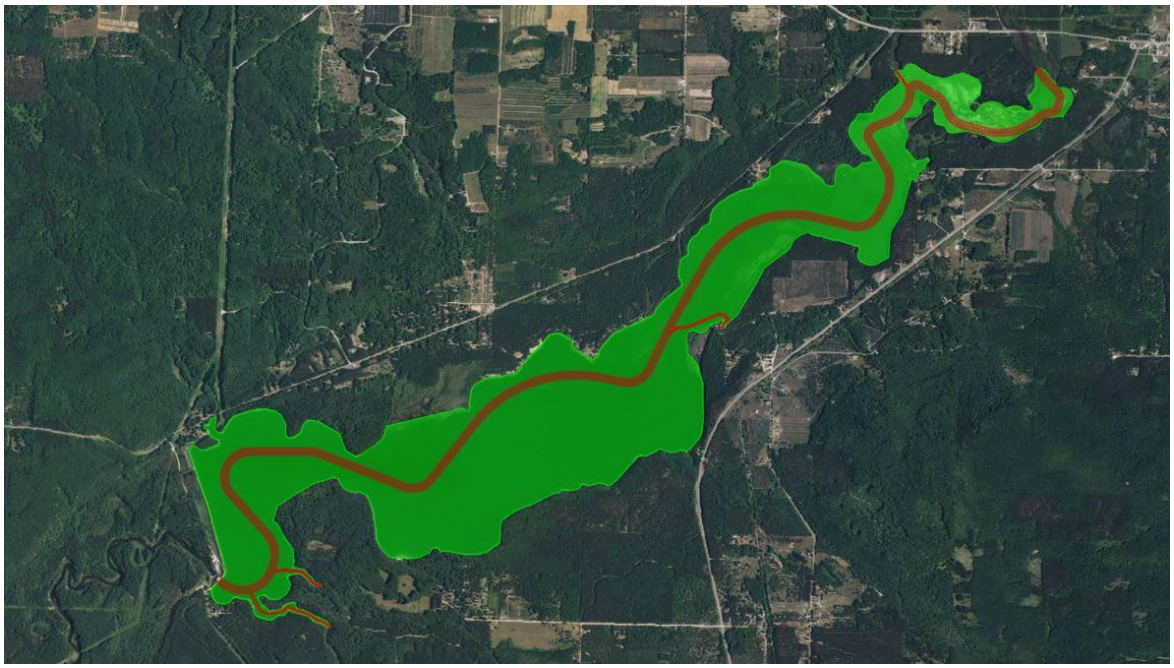
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - Section 7 of the Endangered Species Act requires consultation with Fish & Wildlife Service, which may require other associated studies will be required because the Manistee River downstream of Tippy Dam is designated as a National Wild and Scenic River.
  - Features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Water quality (temperature and potentially dissolved oxygen (DO)) may still be out of compliance for cold water fisheries under License Article 405.
  - May also still cause sediment transport issues.
  - Public disapproval of this option due to its socioeconomic and recreational impact.

- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent. This opinion is based on the following considerations:
  - Manistee River trail suspension bridge approximately 2,200 FT downstream of dam
  - Transmission line monopoles on either side of bank 2,500 FT downstream of dam (likely at high enough elevation to be out of damage risk area)
  - Upper River Road boat launch along right bank approximately 3,400 FT downstream of dam
  - N Coates Highway bridge >6 miles downstream of dam
  - Upper River Road runs along right bank, but no structures nor inhabited homes on either side of downstream banks.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.

- Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
- Eliminates issues of water quality (temperature and potentially DO).
    - Recent letters filed with FERC allege the discharge from Hodenpyl Dam violates the 1992 Federal Energy Regulatory Commissions Settlement Agreement for temperature. Options to lower water temperatures are recommended to improve natural reproduction and recruitment of salmon populations, improve water quality, and reduce reliance on hatchery stocking. Currently the system is not self-sustaining as the Hodenpyl Dam is out of compliance more than half the time during June through September and 70% of the time over the entire year. Sections of the river upstream of Hodenpyl Dam have been evaluated for potential Arctic grayling reintroduction, current dam operation would negatively impact that.
- Eliminates sediment transport issues

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Public disapproval of this option due to its socioeconomic and recreational impact.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Water quality (temperature and potentially DO) may still be out of compliance for cold water fisheries under License Article 405.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.5

Tippy Dam
FERC No. P-2580

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 83-foot-high earth embankment dam sections, each with a concrete core wall.
- An 83-foot-high concrete spillway with four steel radial gates and a concrete-lined discharge channel extending approximately 240 feet downstream that includes a 24-foot-high concrete weir approximately 85 feet downstream of the radial gates.
- A reservoir with a normal surface area of 1,330 acres at elevation 687.4 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 27,620 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 14,255 kilowatts (kW).
- A 170-foot-long concrete-lined tailrace with retaining walls and downstream weir.
- Associated appurtenant structures.



Relicensing

- Major license (referenced in License Order, subject to form L-5)
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS an important stakeholder during relicensing.
- Northern Long Eared Bat, Indiana Bat, and Tri-colored Bat (Endangered species mgmt.) hibernating in spillway
- Wild and Scenic River downstream to Hwy 55 bridge
- Downstream fish barrier
- Buffers excluding development along shoreline

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- RTE Species Management Plans
- Recreation enhancements
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan

Risks to Operating under another 50-year License

- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Tippy Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo,” The interior and exterior of the powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. Although no immediate major repairs are required, additional maintenance and monitoring will be required in several areas to prevent the need for future repairs.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 26, 2018 and consisted of the above-water concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Downstream Spillway Apron (Exposed), Log Chute, Right

Wing Wall/Abutment, Spillway Abutment, Spillway Structural Walkway Deck, Spillway, Piers, and Weir, Training Wall, Upper Left Embankment Retaining Wall, Upstream Powerhouse Piers, and Upstream Spillway Piers). The findings were summarized in a report dated May 14, 2019.

The key findings from the Tippy Dam condition assessment identified three site features (the downstream left embankment retaining wall, downstream powerhouse piers, and log chute) that were rated as BLUE, which means 5 to 10 years before major repairs or replacement is necessary. In addition, cleaning and sealing of joints in the downstream right embankment retaining wall, exposed portion of the downstream spillway apron, and the spillway abutment is recommended. Periodic maintenance, including cleaning and sealing of the cracks and joints on the spillway, piers, and weir, is recommended as well. Golder also recommended continued monitoring of the upper left embankment retaining wall to ensure movement is not taking place. Other structures that were inspected during this condition assessment and are included in this report were given a GREEN rating (10 to 20 years before major repairs or replacement is necessary).

The concrete feature ratings were based on above-water observations only. Golder recommended performing an underwater investigation of each feature and to adjust the ratings and remaining life estimates accordingly.

DIVE INSPECTION

- August 1-2, 2017:
    - Zebra mussels completely covered the trash racks, piers, powerhouse walls, gated spillway, and left uncontrolled spillway. Trash racks were partially blocked by the Zebra mussels and debris.
    - All lower trash racks at Unit #3 were loose without bolts to hold them in place. Several trash racks at the upper portion were also loose without bolts.
    - There is an abandoned stop log in the chute for Unit #1 which could be moved but would need to be removed with a crane.
    - Unit #2 and Unit #3 each had small areas of scoured concrete, each 4 inches deep.
    - The Unit #1 deflector wall was undercut by 8 inches.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a “performance-focused” inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a “deep dive” into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Downstream Filter Replacement – Capital
- Electrical Safety Upgrade – Capital
- Unit 1 Thrust Bearing Replacement – Capital
- Downstream Left Embankment Retaining Wall Remediation – O&M
- Downstream Powerhouse Pier Remediation – O&M
- Log Chute Repairs – O&M
- Spillway Chamber Inspection and Repairs – O&M
- Spillway Tumble Bay Weir Repairs – O&M
- SF6 Breaker Maintenance – O&M
- Powerhouse Apron Monitoring – O&M
- Intake Beam Repairs – O&M

Remediation Projects not in LTFP

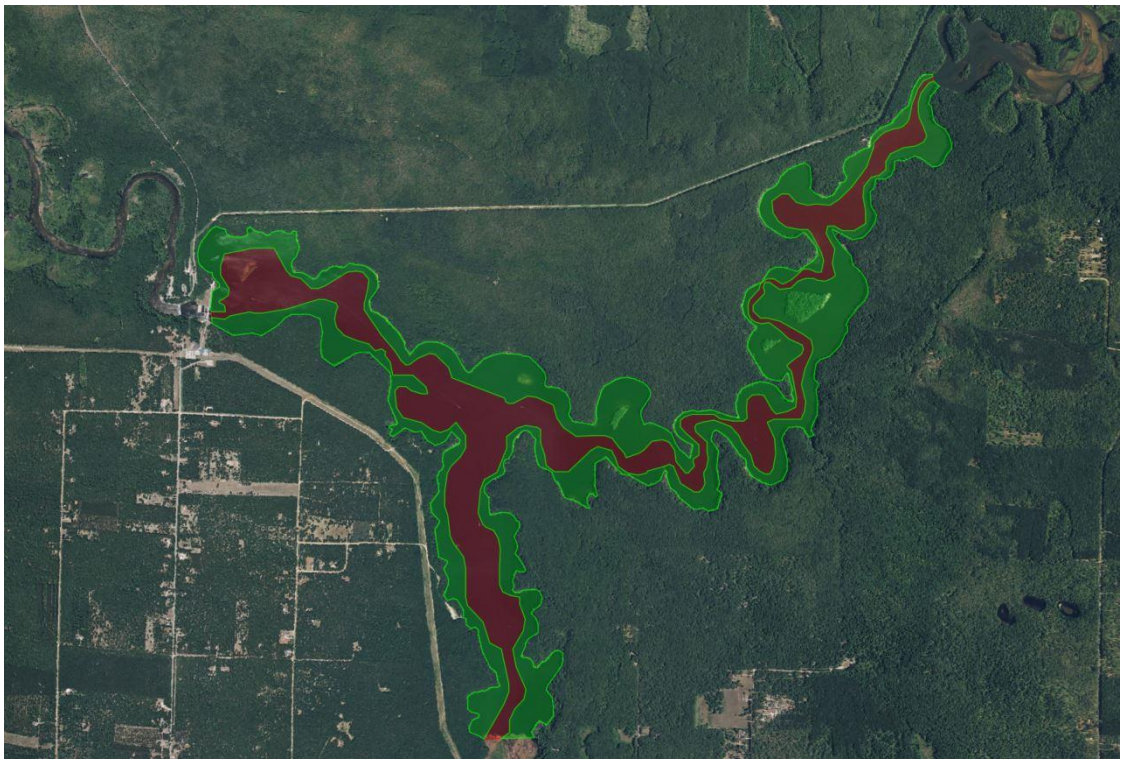
- Unit 2 Bearings
- Unit 1 Cavitation
- Scour Hole Repairs
- Left Tailrace Wall Replacement
- Penstock Concrete Repairs

Generation

The Tippy development consists of 3 units with a calculated maximum generation capacity of 176,076 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 62,108 MWH, contributing 14% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 119,059 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)

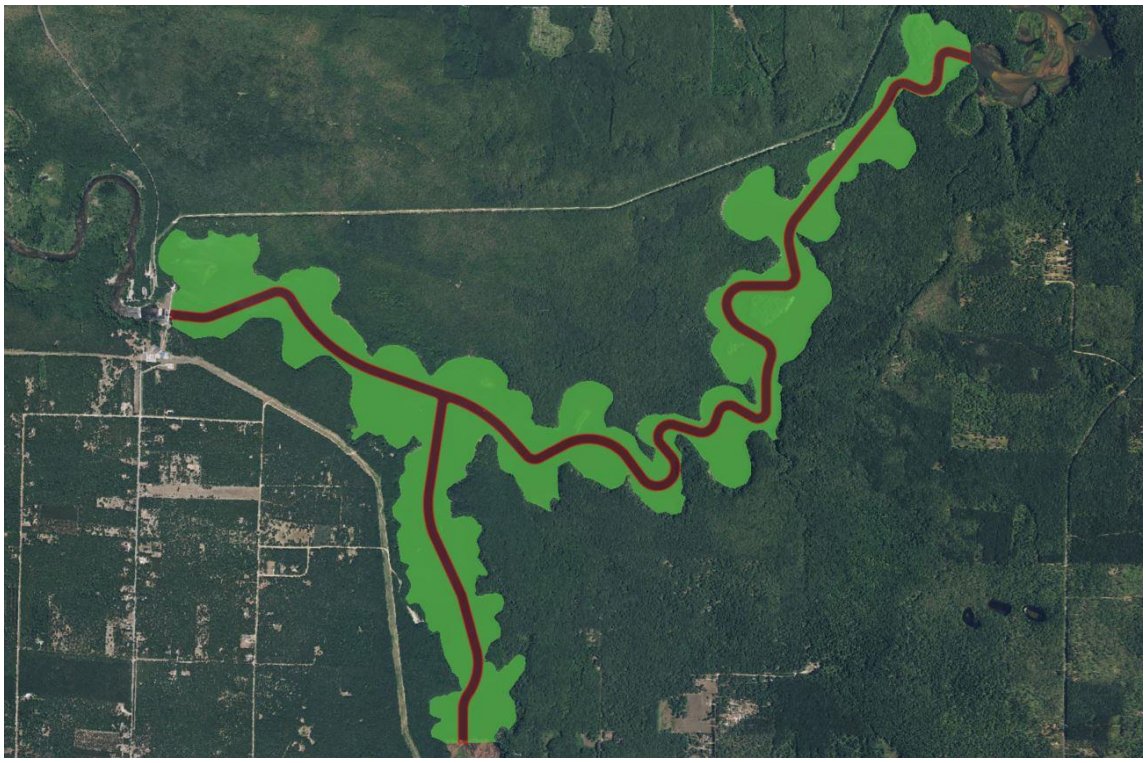


- Pros
  - The Tippy Dam is not currently meeting Article 405 discharge water temperature standards and has been determined to not be self-sustaining

- Cons/Risks
  - Tippy Dam is a barrier to invasive species traveling upstream from Lake Michigan.
  - Water quality (temperature and potentially dissolved oxygen (DO)) may still be out of compliance for cold water fisheries under License Article 405.
  - Tippy Dam has been identified as the only place in the upper Midwest where little brown bat populations have not been affected by White Nose Syndrome. It has not yet been determined why this is but any changes to the environment are highly discouraged. Researchers consider the site a valuable opportunity to determine why bat populations are protected there and studying it could lead to figuring out how to replicate conditions in areas that are affected. The powerhouse is a regionally important hibernacula to an estimated 10,000 little brown bats.

- Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.
- Tippy Dam is part of the Manistee River which is designated as a National Wild and Scenic River. A section 7 of the Endangered Species Act analysis is required for any changes to ensure the free-flow, water quality, and Outstanding Remarkable Values of the rivers are maintained.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
  - Tippy Dam Recreation Area < 500 FT downstream of dam
  - Tippy Dam Public Fishing Access 1,700 FT downstream of dam
  - 1 inhabited residential home >5 miles downstream of dam
  - N High Bridge Road Bridge >5.5 miles downstream of dam
  - Dilling Road runs along right bank for about first 4,000 FT downstream of dam

Decommissioning (Full)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potentially DO).
  - Recent letters filed with FERC allege the discharge from Hodenpyl Dam violates the 1992 Federal Energy Regulatory Commissions Settlement Agreement for temperature. Options to lower water temperatures are recommended to improve natural reproduction and recruitment of salmon populations, improve water quality, and reduce reliance on hatchery stocking. Currently the system is not self-sustaining as the Tippy Dam is out of compliance more than half the time during June through September and 70% of the time over the entire year. Sections of the river upstream of Hodenpyl Dam have been evaluated for potential Arctic grayling reintroduction, current dam operation would negatively impact that.
  - Eliminates sediment transport issues

- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - Consideration of a barrier system to prevent upstream migration of invasive species (sea lamprey and round goby)

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost than full removal or partial removal.
  - Maintain existing reservoir for recreational use. This option would likely be associated with the least public resistance as it would have the least immediate socioeconomic and recreational impact.
  - Fish passage not addressed but option could require installation of fish passage system; discontinuation of MDNR stocking.
  - Preserves the overwintering roosting habitat within Tippy spillway for bats.
- Cons/Risks
  - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - Future repairs to dam structure.
  - Fish passage installation required.

- Water quality (temperature and potentially DO) may still be out of compliance for cold water fisheries under License Article 405.
- Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.6

Mio Dam
FERC No. P-2448

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 40-foot-high earth embankment dam sections, each with a concrete core wall.
- A 17-foot-high concrete spillway with one, 12.7-foot-high steel radial gate and a concrete-lined discharge channel extending approximately 220 feet downstream with a 6.5-foot-high concrete weir located approximately 45 feet downstream.
- A 530-foot-long auxiliary spillway located at the end of the south embankment dam.
- A reservoir with a normal surface area of 661 acres at elevation 962.6 feet (USGS datum) and a gross storage of 6,061 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 3,885 kW. The powerhouse also contains two spill tubes used primarily as the service spillway. Only one spill tube is operational at this time.
- A 185-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Known areas of groundwater contamination (PFAS) upstream of Mio and Upstream Air Force base is a Superfund site.
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing.
- Historic Properties Management Plan (HPMP) – Historic Operators Homesite
- Water Quality out of compliance; MDNR Management Plan calls for removal of the dam. Upwelling system in place without success.
- Wild & Scenic River downstream to Alcona – popular paddling/float trip water trail (Blue water trail recreation)
- Recreation is important resource to region (fishing, paddling, campgrounds, etc.)
    - Camp 10 Boat Launch, Canoe portage at dam, Joseph Pillars Park, MDNR Mio Dam State Forest Campground, MDNR Mio Pond Access, Tailwater access, Scenic Overlook, Oscoda County Park, Rainbow Resort, Wayside Recreation Site, U.S. Forest Service.
- MNDNR lists Mio as priority for removal (only one on Au Sable) due to warming in the reservoir and its detriment to the cold-water fishery (and wild and scenic river designation to Alcona).

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage
- Land/Shoreline Management
- HPMP
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Formalization to run of river mode
- Fish passage requirements
- Temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Mio Hydroelectric Dam 2021 Powerhouse Condition Assessment Results," the powerhouse was given a rating of 'Green', indicating that no major repairs will be needed for another 10 to 20 years. It was recommended that steel support columns in the powerhouse are cleaned and recoated. It was also recommended cracks observed throughout the exterior and interior of the powerhouse are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between May and June 2018 and consisted of the concrete features/structures (Auxiliary Spillway, Downstream Left Embankment Retaining Wall- Segment 1, Downstream Left Embankment Retaining Wall- Segment 2, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Spillway Abutment, Spillway Gate Piers and Concrete, Spillway/Powerhouse Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Apron, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall) and spillway structural walkway. The findings are summarized in a report dated January 4, 2019. Based on this report, the training wall was rated as 'YELLOW' (3 to 5 years before major repairs or replacement is necessary). Three site features were rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary): segment 2 of the left embankment retaining wall, the downstream powerhouse piers, and the log chute. In addition, cleaning of the cracks and sealing the leaks at the base of the downstream slope of the auxiliary spillway was recommended. Golder recommended that the cause and extent of the horizontal cracks at the base of the powerhouse spanning the downstream powerhouse piers be investigated further to develop appropriate repairs, as well as monitoring of the joint between the left wing-wall and pier to confirm that no movement is taking place. Golder also recommended that further study be completed to assess whether the seepage noted during the dive inspection is leading to piping of the soils below and around the dam and the extent to which pore water pressures are generating uplift forces that pose a risk to the dam. Other structures that were assessed in this report were generally found to be in good condition and given a 'GREEN' rating.

An Auxiliary Spillway Assessment Report prepared by BARR (dated November 2017) includes the observations of a non-destructive visual inspection and summarizes the review of design data for the auxiliary spillway. The report also includes the results of the Potential Failure Modes Analysis (PFMA) focused on the auxiliary spillway. The auxiliary spillway was observed to be in good condition. There were localized areas of missing joint sealant and random tight cracking in the stilling basin apron slab and sloped baffle wall section slab. The ongoing inspections should continue to look for cracking, spalling, leakage, joint offsets, and missing joint sealant. The data review included review of the original design computations, soil boring logs in the area of the auxiliary spillway, related FERC correspondence, and construction drawings. The design was found adequate for the design assumptions used at the time of the original 1988 design. The 1988 design and 2009 repairs also appear adequate for the auxiliary spillway to safely pass the current Probable Maximum Flood (PMF) which is less than the PMF at the time of the original auxiliary spillway and repair design. As a result of the focused PFMA, no new monitoring methods or significant risk reduction measures were identified. The focused PFMA highlighted the following maintenance, surveillance, and risk reduction measures related to the auxiliary spillway.

DIVE INSPECTIONS

- June 22, 2021, Spillway Leak Inspection
    - An upstream dive inspection was conducted to assist CEC in identifying the source of the heavy flow through the tumble bay weep holes. Only a slight dye color was detected downstream during the dive inspection which occurred when placing the dye at the upstream end of the left cofferdam concrete seal.
- June 13 and 14, 2018 Part 12 Inspection
    - Upstream
        - Left wing wall and Unit 1 left pier wall exhibited spalling and up to 6 inches of separation between the two walls.
        - Cracking was found on the right powerhouse Unit 1 wall.
        - No significant findings were noted on the powerhouse Unit 2 walls, the right abutment wall, and log chute walls.
        - Right wing wall exhibited spalling, voids in the concrete, exposed rebar, and separation at the interface with the core wall.
        - Spalling and cracking exhibited on the concrete wall spanning between the right abutment wall and the Unit 2 pier wall.
    - Downstream
        - Right embankment retaining wall/spillway abutment wall exhibited spalling and a deteriorated joint at the interface with the weir which had cold water flowing through it.
        - Spalling was noted in the tumble bay.
        - Concrete damage in the freeze/thaw zone was noted on the weir. Exposed rebar and spalling were also exhibited at the weir/downstream apron interface.
        - Spillway apron exhibited spalling and broken concrete.
        - Training wall exhibited spalling with exposed wire mesh.
        - Left embankment retaining wall exhibited spalling and cracking with cold water flowing through.
        - No significant findings were noted on the Units 1 and 2 draft tubes and walls, with the exception of a hole in the concrete in the Unit 1 draft tube.
        - Tailrace apron exhibited spalling and open joints with cold water flowing through.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a “performance-focused” inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a “deep dive”

into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Unit 1 Wicket Gate Refurbishment – Capital
- Unit 2 Wicket Gate Refurbishment – Capital
- Electrical Safety Project – Capital
- Training Wall Replacement – Capital

Remediation Projects not in LTFP

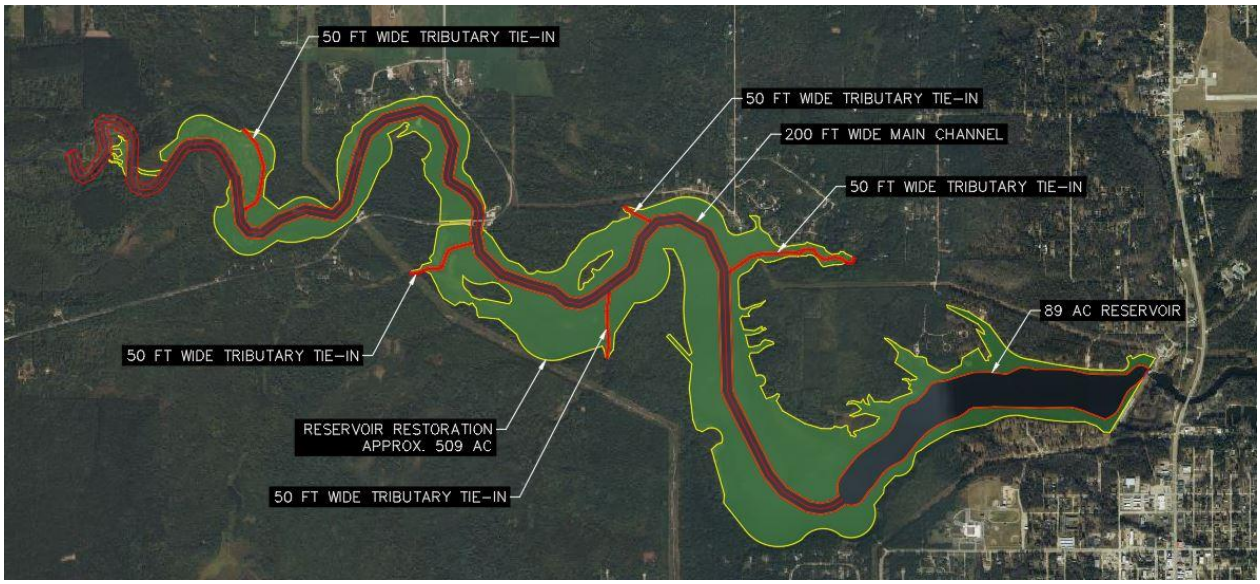
- Tumble Bay Leakage Through Concrete Beneath Spill Gates
- Powerhouse Armpit Leaks
- SF6 Breaker Maintenance
- Concrete Apron Joint Sealing Redo

Generation

The Mio development consists of 2 units with a calculated maximum generation capacity of 43,450 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 15,423 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 22,690 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

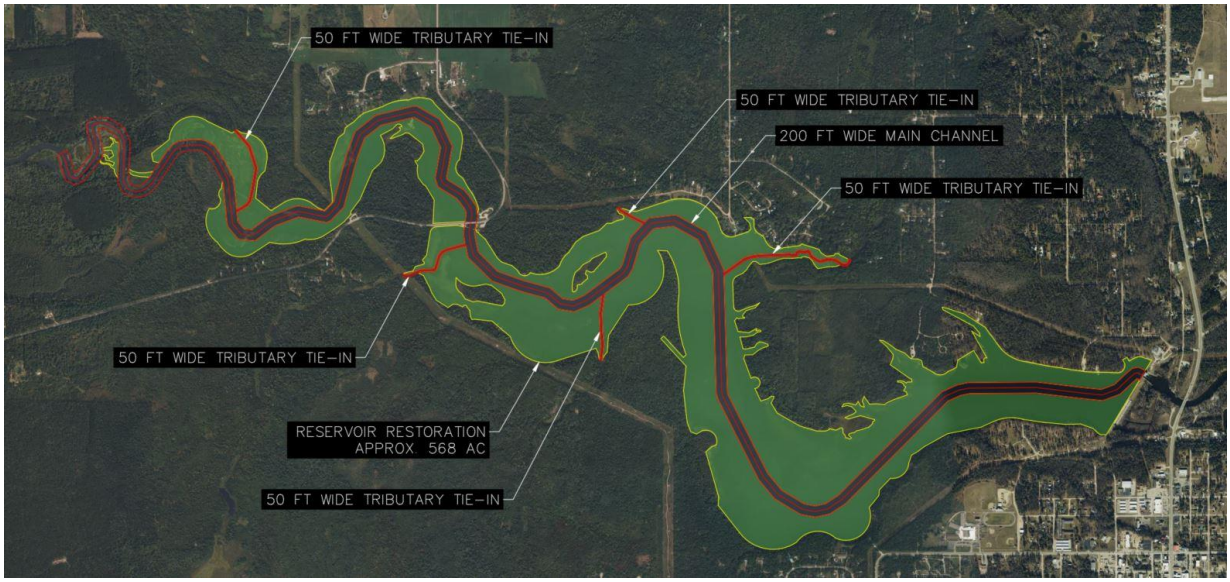
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
  - May also still cause sediment transport issues. Mio Dam should be removed before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Camp 10 Road Bridge partially blocking flow and causing upstream sedimentation may need to be replaced or have a widened underpass.

- Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
- Public disapproval of this option due to its socioeconomic and recreational impact.
    - The Mio Dam also received a State Historic Marker in 2005, which may create additional resistance to the dam removal.
- Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
    - No inhabited residential properties along riverbanks immediately downstream of dam
    - Pedestrian fishing pier approximately 550 FT downstream of dam along left bank
    - RT 33/Morenci Ave Bridge approximately 800 FT downstream of dam
    - Mio Au Sable River Launch approximately 1,350 FT downstream of dam along right bank (start of Wolf Creek pedestrian Trail along right bank)
    - Fed Trail 4367 Canoe Landing along left bank approximately 9,100 FT downstream of dam (start of Fed Trail along left bank).

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
        - Habitat can be restored along the entire footprint of the dam.
    - Eliminates issues of water quality (temperature and DO).
    - Eliminates sediment transport issues (if flow passage through Camp 10 Road Bridge is improved).
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Mio Dam should be removed before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Depending on the distribution of such contamination within the reservoir, this may be a significant cost burden.
    - Camp 10 Road Bridge/Boat Launch rebuild or under passage widening may add significant additional cost burden.

- Public disapproval of this option due to its socioeconomic and recreational impact.
    - The Mio Dam also received a State Historic Marker in 2005, which may create additional resistance to the dam removal.
- Significant planning and analysis required to determine how to manage existing recreational features.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - Contaminated sediment removal and transport not required (contaminated sediments left in place)
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Water quality (temperature and potentially DO) may still be out of compliance for cold water fisheries under License Article 405. Significant costs may be required to bring the water temperature into compliance to support cold water fisheries.
        - As mentioned previously, an upwelling system was installed in Mio Dam, but the water quality is still out of compliance with high water temperatures. Additional features installed carry a similar risk of failure.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.7

Alcona Dam
FERC No. P-2447

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 60-feet-high earth embankment dam sections, each with a concrete core wall
- A 250-feet-long emergency spillway located at the end of the east embankment
- A reservoir with a normal surface area of 1,006 acres at elevation 829.0 feet (USGS datum) and a gross storage of 12,547 acre-feet
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 7,905 kW
- A 135-foot-long concrete tailrace with retaining walls
- Associated appurtenant structures
- Recreation Facilities consist of Alcona Park, East & West Tailwater and canoe portage, and USFS Hwy 4001 Canoe Landing



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- No residential development around reservoir so the number of private landowner/stakeholders in licensing will be less than other sites
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4() measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing.
- Recreation is important resource to region (Popular with canoe trips, camping, county park)
- Water quality out of compliance; MDNR Management Plan calls for removal of the dam
- Significant wild rice population (Tribal interest)
- Historic Properties Management Plan (HPMP) – three original operator structures

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- HPMP
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements or mitigations
- Temperature and potentially dissolved oxygen (DO) exceedances or mitigations will be required
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements
- Ongoing maintenance of ageing equipment

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Alcona Hydroelectric Dam 2021 Powerhouse Condition Assessment Results,” the powerhouse was given a rating of 'Green',

indicating that no major repairs will be needed for another 10 to 20 years. Although no immediate major repairs are required, it was recommended that several features of the structures are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder Associates Inc. (Golder) on September 27 and 28, 2018 and consisted of the above-water concrete features/structures consisting of Downstream Powerhouse Pier, Abutments, and Walkway, Intake Deck Upstream Support Wall, Left Embankment Retaining Wall, Right Embankment Retaining Wall, Upper Left Embankment Retaining Wall, Upstream Powerhouse Piers. The findings are summarized in a report dated May 14, 2019. Based on this report, the intake deck upstream support wall was rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary). The other structures that were inspected during this condition assessment were rated 'GREEN'. The concrete feature ratings were based on above-water observations only. It was recommended to perform an underwater investigation of each feature and to adjust the ratings and remaining life estimates accordingly.

DIVE INSPECTIONS

- October 6, 2022, Unit #2 draft tube/east tailrace/downstream water boils Inspection
    - Bottom of upstream and downstream east retaining walls separated 30 inches – separation filled with stone/concrete blocks with water coming through.
    - Boils observed within 2 vertical construction joints along east retaining wall – 2 boils within each joint.
    - 2 concrete spalls observed in draft tube ceiling.
    - 3 concrete spalls along east apron slab with rebar visible.
    - 3 cracked out pieces of concrete observed along east apron with rebar visible.
    - Concrete spall observed on baffle wall weir.
    - East apron slab separated from baffle wall at several locations. Construction joint in east baffle wall is misaligned by 8 inches between east and west portions.
    - Apron slab downstreams of baffle wall spalled with rebar exposed.
    - 4 water boils are present downstream of the apron slabs.
- October 5, 2022, Unit #1 draft tube/west tailrace
    - 2 concrete spalls observed in draft tube bay for unit #1.
    - Separation of 3 vertical construction joints along west retaining wall with water boils.
    - 4 concrete spalls observed along west retaining wall.
    - 7 diagonal cracks observed along west retaining wall, with several water boils in cracks.
    - 6 concrete spalls observed along west concrete apron slabs .
    - Several apron slab horizontal joints are misaligned/offset, including joint between apron slabs and baffle wall.
    - 8 cracks present along west apron slab.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Due the on-going RIDM process for this project, FERC did not require a formal Part 12 IC inspection and report for 2021. However, an Informal Part 12 inspection was performed. The informal report was limited to a field inspection and a general review of the project data. Recommendations in the informal report cover only site condition issues and are relatively minor. The report did review recommendations from the previous Part 12 report. There is an outstanding recommendation that the existing stability analyses for the embankment and structures should be updated utilizing the current PMF. If this work has not been completed and there is no confirmation that the assets meet current required safety factors, it could lead to recommendations for remediation/upgrades to the project.

Current Remediation Projects in LTFP

- Powerhouse Window Replacement - Capital
- Core Wall Remediation - Capital
- Intake Deck Upstream Support Wall - Capital
- Risk Informed Decision Making - Capital
- Trash Rack Ergonomics - Capital
- Electrical Safety Project - Capital
- Unit 1 Bearings & TGB Sleeve & Wicket Gates - Capital
- Relief Well Installation - Capital
- Units 1 & 2 Governor Replacement - Capital
- Artesian Design Study - Capital
- Units 1 & 2 Head Gate Replacement - Capital
- Left Driveway Retaining Wall Repairs - O&M
- Unit 1 Concrete Repairs (In Spiral Case) - O&M

Remediation Projects not in LTFP

- Head Gate Hoists – Capital

- Unit 2 Bearings & TGB Sleeve & Wicket Gates - Capital
- Unit 2 Overhaul (double acting Kaplan units)

FERC Required Spillway Projects (in LTFP)

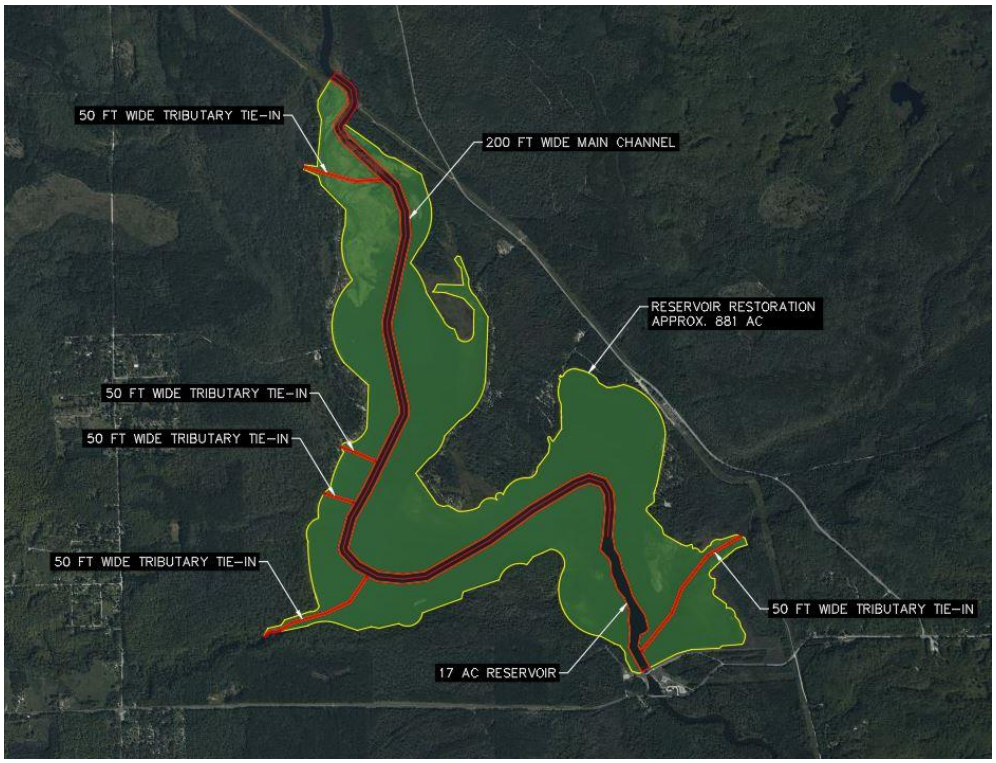
- RIDM Resolution (Auxiliary Spillway/Embankment Modifications/etc.) -Capital
    - The Alcona Risk Informed Decision Making Project identified the risk for auxiliary spillway erosion and subsequent failure exceeded the FERC tolerable risk guidelines. CEC plans to safely convey discharge from the auxiliary spillway across Bamfield Road and toward the forested area to the south by:
        - Installing scour protection along parts of the left non-core wall embankment upstream slope
        - Regrading about 360 feet of the left non-core wall embankment into a cone-shaped transition
        - Constructing a flow-guiding berm to Bamfield Road
        - Re-grading the auxiliary spillway channel to direct water toward the centerline of the spillway
        - Regrading Bamfield Road and constructing a scour-resistant cross to direct discharge across the road toward the Au Sable River

Generation

The Alcona development consists of 2 units with a calculated maximum generation capacity of 70,080 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 29,025 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 56,599 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

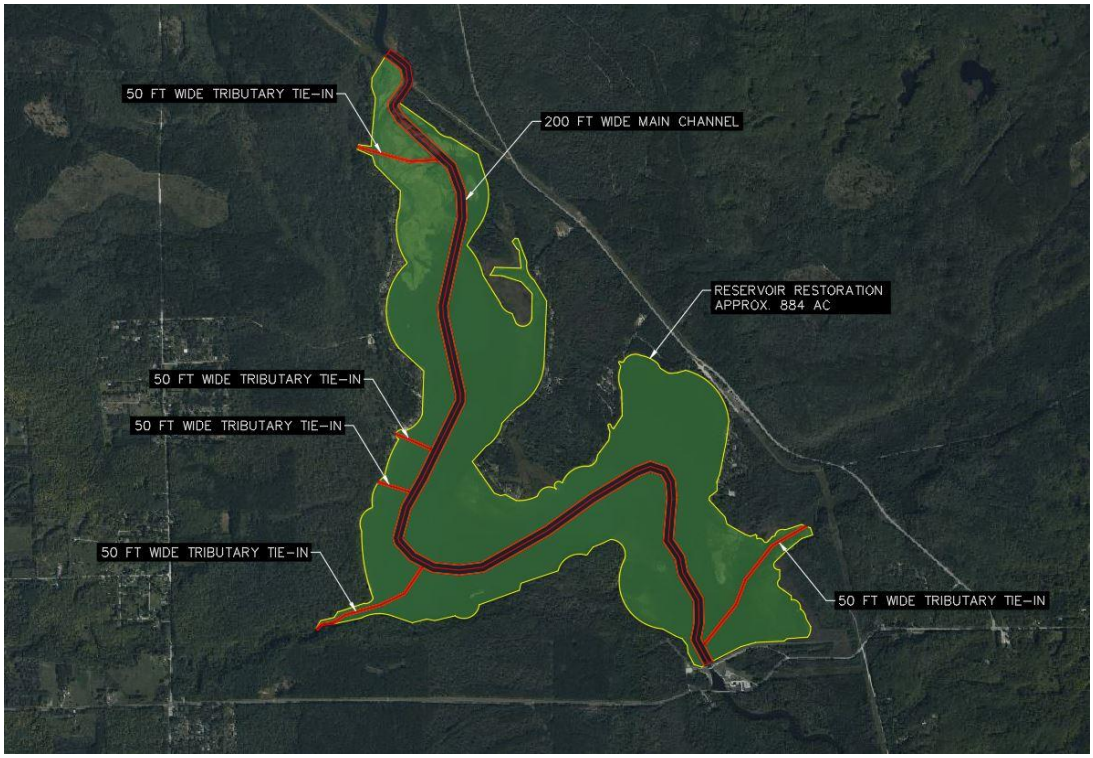
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.

- Cons/Risks
    - Emergency spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405.
    - May also still cause sediment transport issues. Alcona Dam should be removed after the removal of the Mio Dam and before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir limits.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
        - 3 inhabited residential properties are located along right bank between 500 FT to 800 FT downstream of dam (along S Alcona Dam Road)
        - Bamfield Road Bridge is located approximately 500 FT downstream of dam
        - Bobcat Creek Park is located approximately 10,000 FT downstream of dam

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potential DO).
  - Eliminates sediment transport issues.

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Alcona Dam should be removed after the removal of the Mio Dam and before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Depending on the distribution of such contamination within the reservoir, this may be a significant cost burden.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine how to manage existing recreational features.

License Surrendering (Non-Power Operation)

- Pros
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved, but requires installation of fish passage system; discontinuation of MDNR stocking.

- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - The non-power operation of the Alcona Dam may cost more than either of the removal options due to repairs that are needed for the earth dam and core wall, the tailrace, upslope protection, and a possible extension needed for the right embankment according to the Kiewit cost evaluation. The Kiewit cost evaluation also considers a widening of the auxiliary spillway which includes a flow guiding berm and regrading of Bamfield Road.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405. Significant costs may be required bring the water temperature into compliance to support cold water fisheries.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.8

Loud Dam
FERC No. P-2449

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 42-foot-high earth embankment dam sections, each with a concrete core wall.
- A 20-foot-high concrete spillway with three, 15.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 6.5-feet-high concrete weir located approximately 45 feet downstream.
- A 100-feet-long emergency spillway.
- A reservoir with a normal surface area of 743 acres at elevation 742.6 feet (USGS datum) and a gross storage of 6,987 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 4,000 kW.
- A 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 125 feet downstream.
- Associated appurtenant structures.
- Peaking plant operations (only on Au Sable)
- Significant amount of surrounding lands owned by USFS and Consumers; no development.
- Operationally linked with Five Channels Dam



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Peaking plant reregulated by Five Channels Dam downstream
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing. Sedimentation of upper end of reservoir
- Operators homes listed on National Register of Historic Places (NRHP)
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Westgate, which is a popular overlook on M-65. The Iron Belle Trail/Iosco Exploration Trail will be using CE property near Westgate

Future License Conditions

- Operations monitoring/automation
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan (HPMP)
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Loss of peaking operations
- Fish passage requirements
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Loud Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The interior and exterior of the powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. Although no immediate major repairs are required, additional maintenance and monitoring will be required in several areas to prevent the need for future repairs. Additionally, it is recommended to repair the spalling with exposed rusting reinforcing steel above Unit 1 to prevent further deterioration.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and July 2018 and consisted of the concrete features/structures (excluding the powerhouse) and spillway structural walkway. The findings were summarized in a condition assessment report for Loud Hydroelectric Dam dated January 4, 2019.

The key findings from the Loud Dam condition assessment identified two site features (embankment core wall section - above water, and training wall) that were rated as ORANGE (1 to 3 years before major repairs or replacement is necessary). One site feature (segment 2 of the downstream left embankment retaining wall) was rated as YELLOW (3 to 5 years before major repairs or replacement is necessary). In addition, periodic maintenance including cleaning and re-sealing of the joints is recommended for segment 1 of the downstream left embankment wall, log chute, and upstream spillway piers as soon as practicable. Golder recommends removing the vegetation overgrowth on the emergency spillway concrete sloping wall so that the remainder of the wall can be properly inspected. Golder also recommended refinishing the areas with protective coating loss on the spillway structural walkway to ensure corrosion does not reduce the design life of the structure. The underwater inspection of the right wing wall observed a 0.5-inch separation of the joint between the abutment and wing wall. Continued monitoring of the wing wall to abutment joint during routine dive inspections is recommended to confirm there is not future movement of the wall. Other structures that were inspected during this condition assessment and are included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- Downstream Spillway, May 18, 2021:
    - 3 Diagonal cracks, 2 horizontal cracks, 2 vertical cracks, 4 concrete spalls, and 2 open vertical construction joints at north retaining wall.
    - 2 vertical cracks, 1 horizontal crack, 2 diagonal cracks, and 2 open vertical construction joints at divider pier between the spillway and powerhouse.
    - The downstream scour apron was separated from the divider wall at several locations by up to 8 inches. Several concrete spalls up to 5 inches deep were observed in the apron.
- Upstream Powerhouse & Spillway, May 19, 2021:
    - Lifting chains and connectors in the upstream spillway were deteriorated by up to 10%.
    - One horizontal crack was observed at the north retaining wall along the upstream spillway. One concrete spall was observed at the construction joint between the wing wall and the North retaining wall.

- Trash rack bars are deteriorated up to 10% throughout. Trash racks in Bay #3 are completely blocked with Zebra mussels. Bay 3 is a dead bay with not generating unit installed.
- One concrete spall at the pier between Bay #s 2 and 3.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement. The exception to this is the potential for repair of the core wall based on the results of the evaluation of survey data for ongoing movements, the repair of the left spillway retaining wall and the review of whether the emergency spillway is needed to pass the PMF.

Current Remediation Projects in LTFP

- Units 1 and 2 Governor Replacement – Capital
- Remote Spillgate Controls Installation – Capital
- Spillway Hoist Replacement – Capital
- Unit 1 Wicket Gate Replacement – Capital
- Unit 2 Wicket Gate Replacement – Capital
- Left Embankment Seepage Cutoff – Capital
- Electrical Safety Project – Capital
- Transformer Replacement – Capital
- Left Embankment Retaining Wall Replacement – Capital
- Unit 1 Generator Rewind – Capital
- Powerhouse Window Replacement – Capital
- Intake Deck Remediation – O&M

Remediation Projects not in LTFP

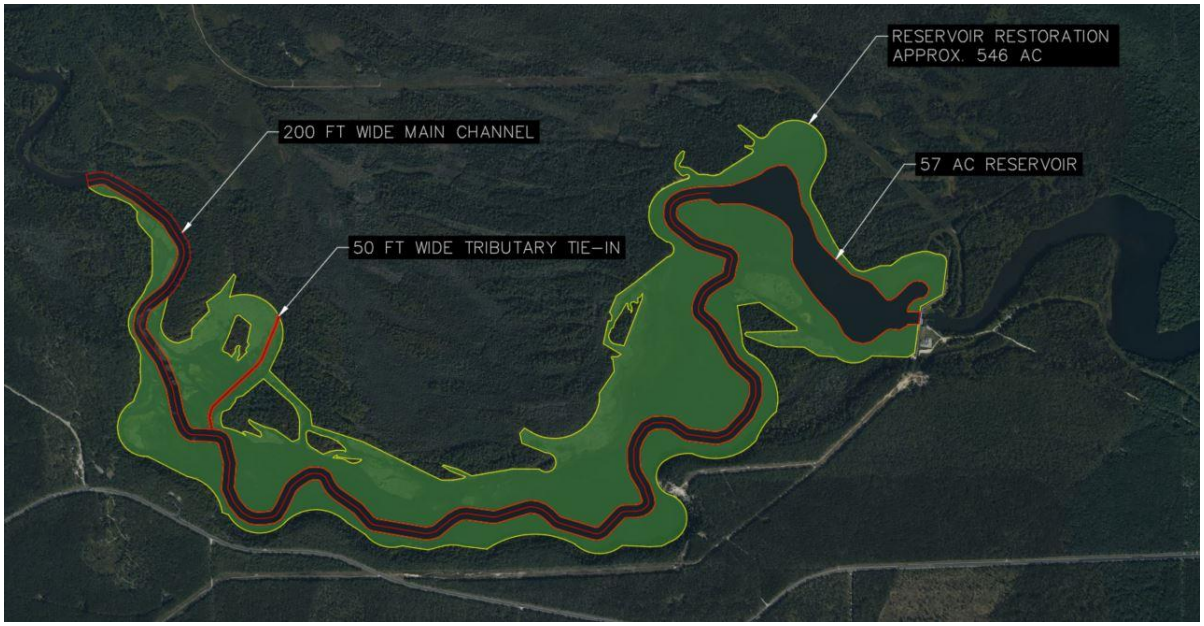
- Grass Lined Emergency Spillway Modification
- Units 1, 2, and 3 Headgate Replacement or Remediation
- Units 1 and 2 Concrete Repairs

Generation

The Loud development consists of 2 units with a calculated maximum generation capacity of 35,040 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 18,689 MWH, contributing 4% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 23,588 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Loud Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.

- Cons/Risks
    - Emergency spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - May also still cause sediment transport issues. The Loud Dam should be removed after removal of all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
        - 3 residential homes along right bank approximately 1,100 FT to 1,500 FT downstream of dam

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
    - Eliminates sediment transport issues
    - It is unlikely that the Loud Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Loud Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.9

Five Channels Dam
FERC No. P-2453

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 45-feet-high earth embankment dam sections, each with a concrete core wall
- A 25-foot-high concrete spillway with three, 14.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 8-foot-high concrete weir located approximately 60 feet downstream
- A reservoir with a normal surface area of 212 acres at elevation 715.0 feet (USGS datum) and a gross storage of 3,419 acre-feet
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 5,966 kW
- A 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 120 feet downstream
- Associated appurtenant structures
- Peaking operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Peaking operations
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4() measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Most visible dam on the Au Sable River due to the bridge crossing for M-65 at the dam. The old M-65 bridge is owned by MDOT and is key bridge for snowmobilers to cross the river.
- Five Channels Dam "Workers Camp" is listed on National Register of Historic Places

Future License Conditions

- Operations monitoring/automation
- Water quality monitoring
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Loss of peaking operations
- Fish passage requirements
- Temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Five Channels Hydroelectric Dam 2021 Powerhouse Condition Assessment Results," the powerhouse was given a rating of 'Green', indicating that no major repairs will be needed for another 10 to 20 years. It was recommended that exposed reinforcing steel observed near one of the units be repaired to prevent further deterioration. It was also recommended that cracking and spalling observed throughout the exterior and interior of the powerhouse are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and August 2018 and consisted of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Apron, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall, Upstream Spillway Piers) and Spillway Structural Walkway. The training wall was rated as 'YELLOW' (3 to 5 years before major repairs or replacement is necessary). Another site feature, the log chute, was rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary). In addition, biennial dive inspections of the downstream powerhouse apron and right wing-wall are recommended for continued monitoring. Golder recommended refinishing of areas with loss of protective coating on the spillway structural walkway deck to ensure corrosion does not reduce the design life of the structure. It is also recommended to perform periodic maintenance including cleaning and sealing of the joints as soon as practicable. Other structures that were inspected during this condition assessment and are included in this report were generally found to be in good condition and given a 'GREEN' rating.

DIVE INSPECTIONS

- Upstream Spillway and Powerhouse, July 14, 2021:
    - Spall on concrete on right side of divider pier between spillway and powerhouse.
    - Spill bays 1 through 3 exhibited no defects however the cotter keys need replacing.
    - Open construction joint (up to 3 inches wide) with sediment coming through at the bottom at the intersection between right wing wall and retaining wall.
    - Upstream left wing wall and Bays 1 through 3 trash racks exhibited no defects.
    - Upstream left retaining wall exhibited vertical cracks, 2 concrete spalls, and a vertical open construction joint between the retaining wall and the wing wall.
    - Spall on right side of divider pier between powerhouse and spillway.
- Downstream Powerhouse and Spillway, July 15 and 19, 2021:
    - Spall on concrete on left tailrace retaining wall.
    - No defects exhibited in draft tube Bays 1 and 2 but a horizontal concrete spall was exhibited on the left side of the divider pier between Bays 2 and 3.
    - No defects exhibited in the log chute.

- An open construction joint was exhibited on the downstream divider pier between the powerhouse and spillway.
- Minor undermining of the powerhouse concrete apron slab was exhibited downstream of draft tube 2 however no concrete defects were noted.
- No defects were exhibited on the spillway downstream right retaining wall and weir wall.
- Cracks, spalls, and an open vertical construction joint were exhibited on the right side of the divider pier between the spillway and powerhouse.
- No significant defects were exhibited downstream of the spillway concrete scour apron however 1 spall was exhibited adjacent to a construction joint.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Remote Spillgate Controls Installation – Capital
- Unit 1 Wicket Gate Refurbishment – Capital
- Unit 2 Wicket Gate Refurbishment – Capital
- Dead Bay and Log Chute Replacement – Capital
- Headgate Replacement – Capital
- Spillway Hoist Replacement – Capital
- Training Wall Replacement – Capital
- Trash Rack Ergonomics Project - Capital
- Intake Deck Concrete Repairs – O&M
- Left Embankment Stability Study – O&M

Remediation Projects not in LTFP

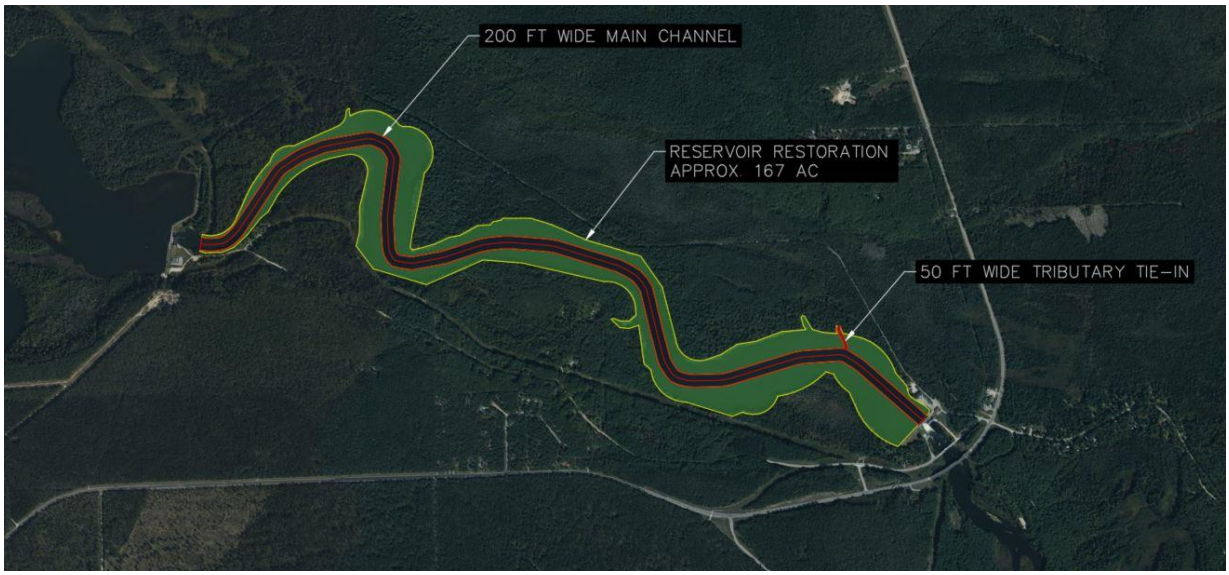
- Study of Water Left of Powerhouse in Groin Area
- Study of Wall Left of Powerhouse
- Unit Upgrades
- Backside Upstream Side of Powerhouse Leaking (might be addressed with Dead Bay Project)
- Units 1 and 2 Concrete Repairs

Generation

The Five Channels development consists of 2 units with a calculated maximum generation capacity of 52,560 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 25,032 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 32,728 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

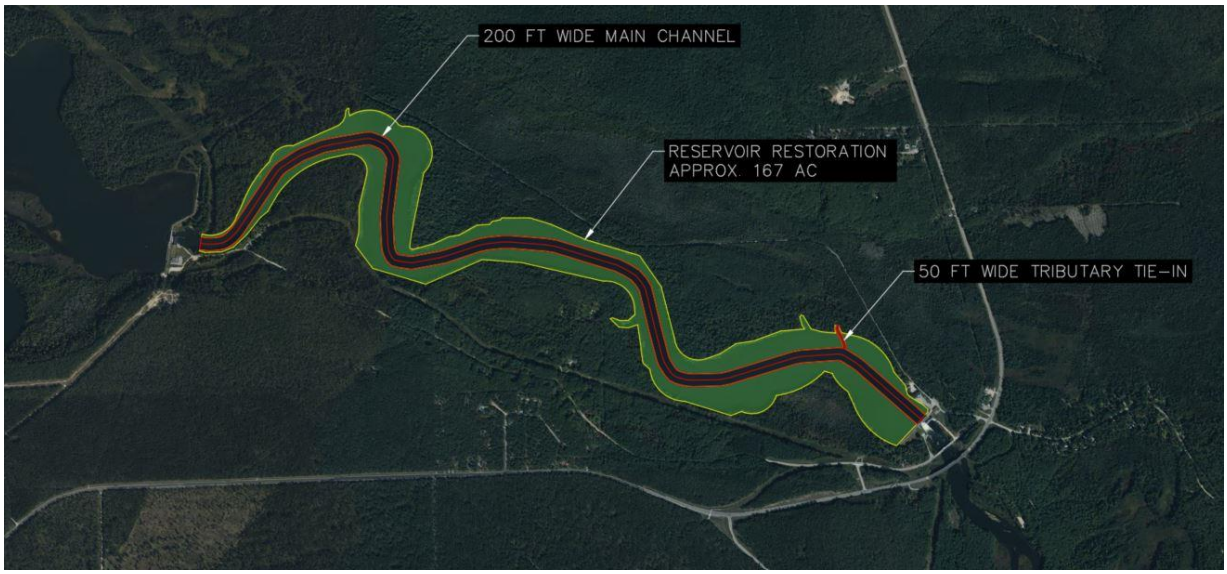
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Five Channels Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
  - It is anticipated that less dredging will be required within this reservoir due to it being located directly downstream of the Loud Dam where a large portion of upstream sediments have already settled out. The existing 212-acre reservoir more closely mimics a wide river than a true reservoir. Limited bathymetry is available but based on aerials it looks to preserve the natural channel within the reservoir.
  - Less intense planning and analysis required to determine how to manage existing recreational features since reservoir shoreline should not significantly recede. There are also very few recreational features along this reservoir shoreline.

- Cons/Risks
    - Features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - May also still cause sediment transport issues. The Five Channels Dam should be removed after removal of all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Additional costs will be required to remove office buildings and warehouses adjacent to the dam. Contaminant surveys should be conducted for these buildings.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
        - Habitat can be restored along the entire footprint of the dam.
    - Eliminates sediment transport issues
    - It is unlikely that the Five Channels Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
    - It is anticipated that less dredging will be required within this reservoir due to it being located directly downstream of the Loud Dam where a large portion of upstream sediments have already settled out. The existing 212-acre reservoir more closely mimics a wide river than a true reservoir. Limited bathymetry is available but based on aerials it looks to preserve the natural channel within the reservoir.
    - Less intense planning and analysis required to determine how to manage existing recreational features since reservoir shoreline should not significantly recede. There are also very few recreational features along this reservoir shoreline.
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Five Channels Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Additional costs will be required to remove office buildings and warehouses adjacent to the dam. Contaminant surveys should be conducted for these buildings.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden
  - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
  - Fish passage improved, but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Office buildings and warehouses adjacent to dam can remain in place.
- Cons/Risks
  - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - Future repairs to dam structure.
  - Fish passage installation required.
  - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.10

Cooke Dam
FERC No. P-2450

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

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April 2023

Site Characteristics

- Two, 50-feet-high earth embankment dam sections, each with a concrete core wall.
- A 25-foot-high concrete spillway with three, 15-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 11.5-foot-high concrete weir located approximately 50 feet downstream.
- A reservoir with a normal surface area of 1,627 acres at elevation 678.5 feet (USGS datum) and a gross storage of 26,749 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 7,500 kW.
- An approximately 120-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures.
- Recreation Facilities consist of Iargo Springs, Canoer's Memorial, and Lumberman's Monument.
- Peaking Operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Cooke Dam listed on National Register of Historic Places (NRHP)
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline

Future License Conditions

- Operations monitoring/automation
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Cooke Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo,” The interior of the powerhouse structure was given a 'Green' rating, indicating that major repair will not be needed for about 10 to 20 years. However, the exterior powerhouse was given a rating of ‘Blue,’ corresponding to 5 to 10 years until major repairs are needed. The ‘blue’ rating is due to deterioration of the left exterior concrete powerhouse and Unit #3 penstock exterior wall. It is recommended that destructive testing be performed to evaluate the concrete and the potential extent of rehabilitation.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between May and July 2018 and consisted of an assessment of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Powerhouse Apron, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Right Wing Wall, Upstream Spillway Apron, Upstream Spillway Piers) and spillway structural walkway. The findings were summarized in a condition assessment report for Cooke Hydroelectric Dam (dated January 4, 2019).

The key findings from the Cooke condition assessment identified two site features (the right downstream embankment retaining wall and the log chute) that were rated as YELLOW (3 to 5 years before major repairs or replacement is necessary). Two site features (the left and right upstream wing walls) were rated as BLUE (5 to 10 years before major repairs or replacement is necessary). Other structures that were inspected during this condition assessment and are included in this report were given a GREEN rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTION

- Upstream Powerhouse & Spillway, July 17, 2018:
    - Two horizontal cracks and one vertical open construction joint at the South retaining wall. Three concrete spalls were observed in the open construction joint.
    - The South wing wall has one vertical crack and three diagonal cracks.
    - The steel trash rack bars were deteriorated up to 10%. Trash racks were approximately 20% blocked with debris.
    - One diagonal crack was observed in the divider pier between the powerhouse and the spillway.
    - One concrete spall and one open vertical construction joint were observed in the north retaining wall. The North wing wall has one vertical crack and one concrete spall.
    - One horizontal crack was observed at the north divider pier at Bay #1.
- Downstream Powerhouse & Spillway, July 18, 2018:
    - Lifting chains and connectors in the upstream spillway were deteriorated by up to 10%.
    - One horizontal crack at the north retaining wall along the upstream spillway. One concrete spall at the construction joint between the wing wall and the North retaining wall.
    - Trash rack bars are deteriorated up to 10% throughout. Trash racks in Bay #3 are completely blocked with Zebra mussels. Bay 3 is a dead bay with not generating unit installed.
    - One concrete spall at the pier between Bay #s 2 and 3.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Headgate Replacement – Capital
- Plant Lighting Upgrade – Capital
- Midslope Retaining Wall Replacement – Capital
- Remote Spillgate Control Installation – Capital
- Right Embankment Retaining Wall Replacement – Capital
- Left Embankment Core Wall Addition – Capital
- Right Embankment Core Wall Slab Extension – Capital
- Spillway Hoist Replacement – Capital
- Electrical Safety Upgrade – Capital
- Step Up Transformer (GSU) Replacement – Capital
- Station Battery Replacement – Capital
- Powerhouse Window Replacement – Capital
- Apron Joint/Crack Sealant -O&M
- Log Chute Concrete Repair – O&M
- Powerhouse Divider Wall Pier Repair – O&M
- Unit 1 Intake Deck Concrete Repair – O&M
- Right and Left Upstream Wingwall Repair – O&M

Remediation Projects not in LTFP

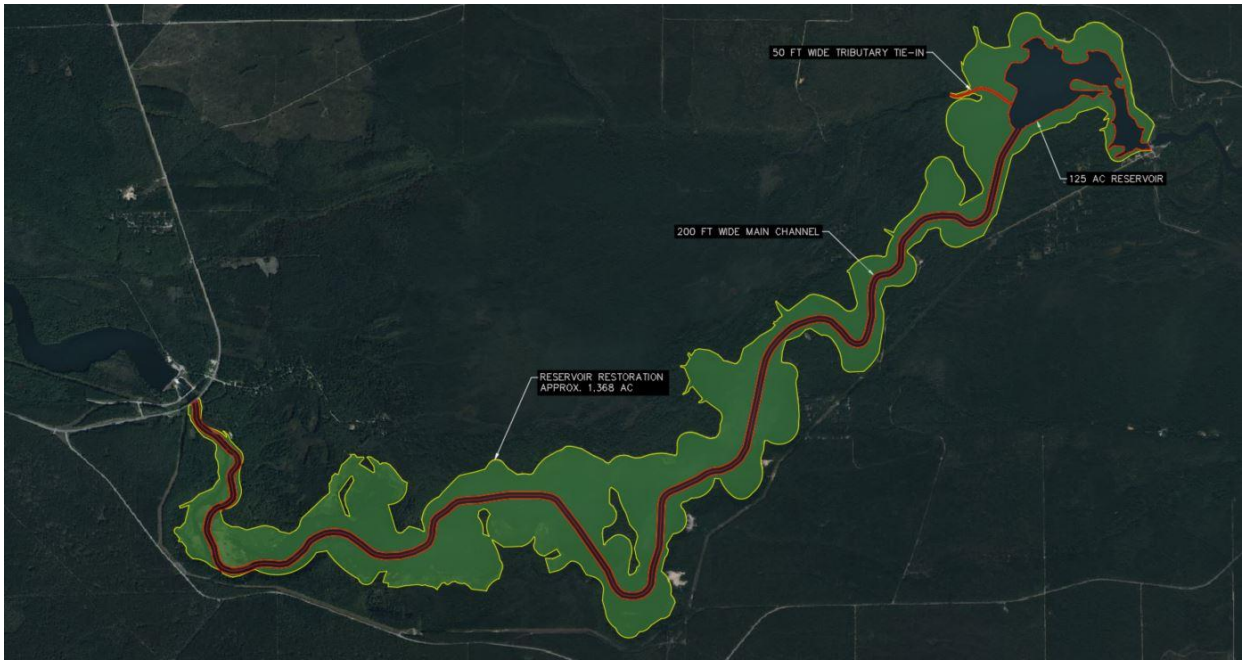
- Concrete Hallway Chambers Remediation
- Powerhouse Basement Concrete Repairs
- Units 1, 2, and 3 Concrete Repairs

Generation

The Cooke development consists of 3 units with a calculated maximum generation capacity of 78,840 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 27,803 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 39,568 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

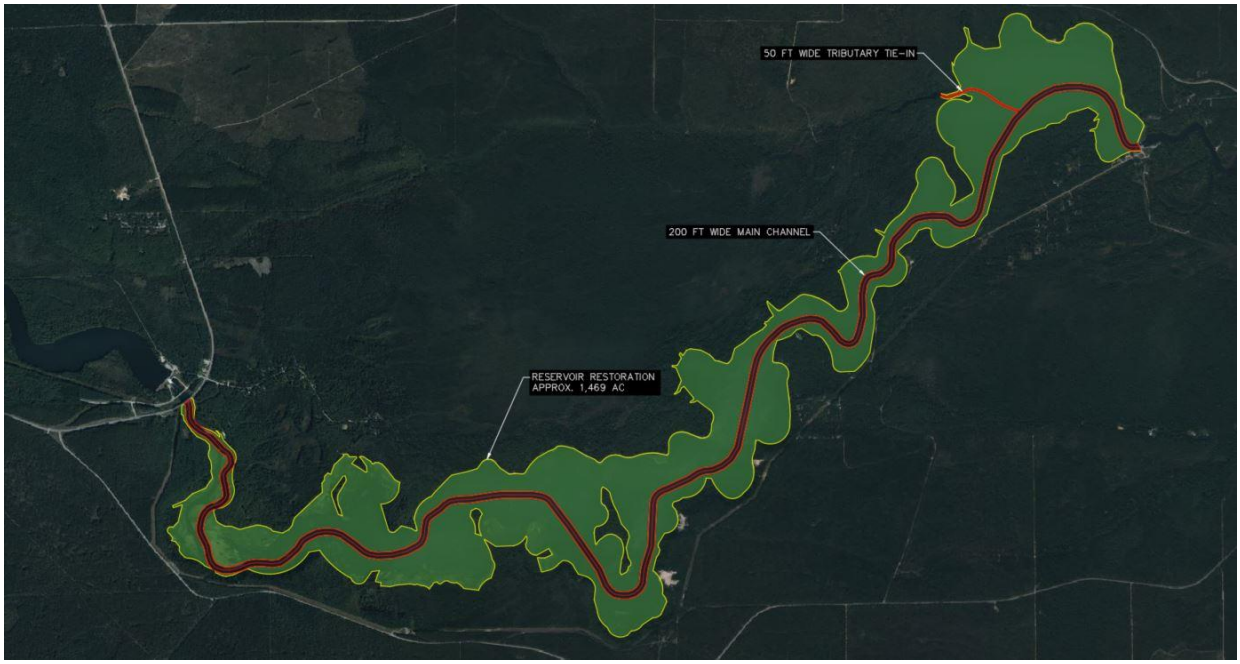
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Cooke Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
  - Installing a new dam/weir structure will preserve the secondary barrier for invasive species attempting to travel upstream from Lake Huron.

- Cons/Risks
    - Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - The 46 kV substation will need to be relocated outside of the floodplain.
    - May also still cause sediment transport issues. The Cooke Dam should be removed after removal of the Mio, Alcona, Loud and Five Channels dams and before the Foote Dam so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - The Cooke Dam also received a State Historic Marker in 2005 and is on the National Register of Historic Places, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent. This opinion is based on the following considerations:
        - Two inhabited residential properties located along left riverbank 1,600 FT downstream of dam (located at high enough elevation to not be at a significant risk of damage)
        - Au Sable River Camping sites located along left and right banks starting at approximately 4,000 FT downstream of dam

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
  - Eliminates sediment transport issues
  - It is unlikely that the Cooke Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Cooke Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - The 46 kV substation will need to be relocated outside of the floodplain.
    - The dam serves as a secondary barrier to invasive species attempting to travel upstream from Lake Huron behind Foote Dam. Additional costs may be required to install sea lamprey control barriers (such as the FishPass system).
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - The Cooke Dam also received a State Historic Marker in 2005 and is on the National Register of Historic Places, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - The 46 kV substation could also remain in place under this option.
    - Keeping the dam in place will preserve the secondary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.11
Foote Dam
FERC No. P-2436

Submitted to:

Consumers Energy Company

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Submitted by:

WSP

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April 2023

Site Characteristics

- Two, 55-feet-high earth embankment dam sections, each with a concrete core wall.
- A 30-feet-high concrete spillway with three, 14.5-feet-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 12-feet-high concrete weir located approximately 65 feet downstream.
- A reservoir with a normal surface area of 1,702 acres at elevation 639.2 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 32,380 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 7,229 kilowatts (kW).
- A 25-feet-long concrete apron in the tailrace with concrete and sheet pile (right downstream side only) retaining walls extending 165 and 290 feet downstream, respectively.
- Associated appurtenant structures.
- Run-of-River operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Water Quality out of compliance for temp and potentially dissolved oxygen (DO)
- Considerable Public Recreation use on Au Sable River. Foote Reservoir known for fishing and boating as most downstream reservoir and proximity to Lake Huron
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Reservoir closest to Oscoda and Au Sable (population centers) on Lake Huron and potential for more public input different from reservoirs and reaches higher in the watershed (regional differences in interest areas)

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements or mitigation
- Temperature and potential DO exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Foote Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The exterior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. However, the interior powerhouse was given a rating of 'Yellow,' corresponding to 3 to 5 years until major repairs are needed. The 'Yellow' rating is due to observed cracks and enlarged joints which indicate movement of the structure, particularly at the downstream left corner of the powerhouse. It is recommended that additional monitoring of the observed movement be performed moving forward, including periodic photographic documentation and additional survey points. It is also recommended that a thorough inspection of the interior crane be performed by a firm that certifies cranes.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and July 2018 and consisted of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Apron, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Emergency Spillway Concrete Sloping Wall, Log Chute, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall, Upstream Spillway Apron, Upstream Spillway Piers) and spillway structural walkway. The findings were summarized in a condition assessment report for Foote Hydroelectric Dam (dated January 4, 2019).

The key findings from the Foote condition assessment identified two site features (the log chute and training wall) that are rated as BLUE (5 to 10 years before major repairs or replacement is necessary). In addition, the vertical joint at the transition between the sloped and horizontal portions of the downstream right embankment retaining wall should be repaired of damaged concrete and the joint cleaned and re-sealed. Less than 50% of the emergency spillway concrete sloping was visible and it is recommended the wall be cleared of vegetation overgrowth so that the remainder of the wall can be properly inspected. Golder recommended that the spillway structural walkway

deck be refinished in areas with protective coating loss to ensure corrosion does not reduce the design life of the structure, as well as cleaning and re-sealing of the joints between slabs. The joint between the wing walls and abutments on both the left and right wing walls should continue to be monitored during routine dive inspections. The grout seal for an old cofferdam used for construction on the upstream side of the spillway has exhibited spalling and should continue to be monitored to ensure the irregular surface does not cause advanced spalling of the existing apron concrete. Cleaning and resealing of the joints between the upstream spillway piers and structural walkway deck that were observed to have loose and separated sealant is also recommended. Other structures that were inspected during this condition assessment and included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- Powerhouse, July 30, 2018:
    - One concrete spall and an open construction joint at the upstream south retaining wall.
    - The trash racks are deteriorated up to 10%.

  - The upstream concrete divider pier between bays 2 and 3 spalled at the water surface.
  - One concrete spall and an open vertical construction joint at the downstream south retaining wall.
  - One vertical concrete crack between the log chute and draft tube bay 1.
  - Construction joints in the downstream apron slab at several locations, and 7 areas of concrete spalling.
- Spillway, July 31, 2018:
  - One open construction joint between the north upstream retaining wall and the north wing wall.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement.

Current Remediation Projects in LTFP

- ADA Ramp Replacement – Capital
- Units 1, 2, and 3 Governor Replacement – Capital
- Fish Net Frame Removal – Capital
- Spillway Hoist Replacement – Capital
- Trash Rack Ergonomics Project – Capital
- Electrical Safety Project – Capital
- Station Battery Replacement – Capital
- Unit 2 Wicket Gate Replacement – Capital
- Right Steel Sheet Pile Cut Off Wall PMF Overtopping Replacement – Capital
- Auxiliary Spillway Pilot Channel and Embankment Crest Grading – O&M
- Downstream Concrete Repairs – O&M

Remediation Projects not in LTFP

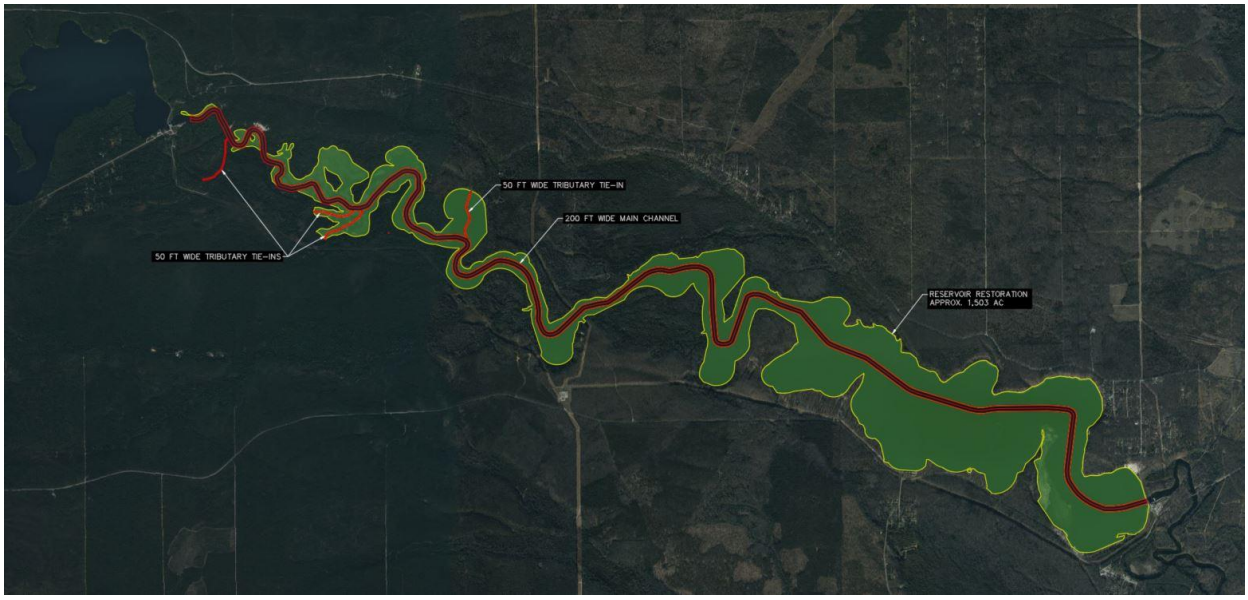
- Emergency Spillway
- Powerhouse Basement Leaks
- Units 1 and 3 Headgate Realignment
- Units 1, 2, and 3 Concrete Repairs
- Left Downstream Powerhouse Wall Remediation/Repair

Generation

The Foote development consists of 3 units with a calculated maximum generation capacity of 78,840 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 30,711 MWH, contributing 7% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 61,642 MWH.

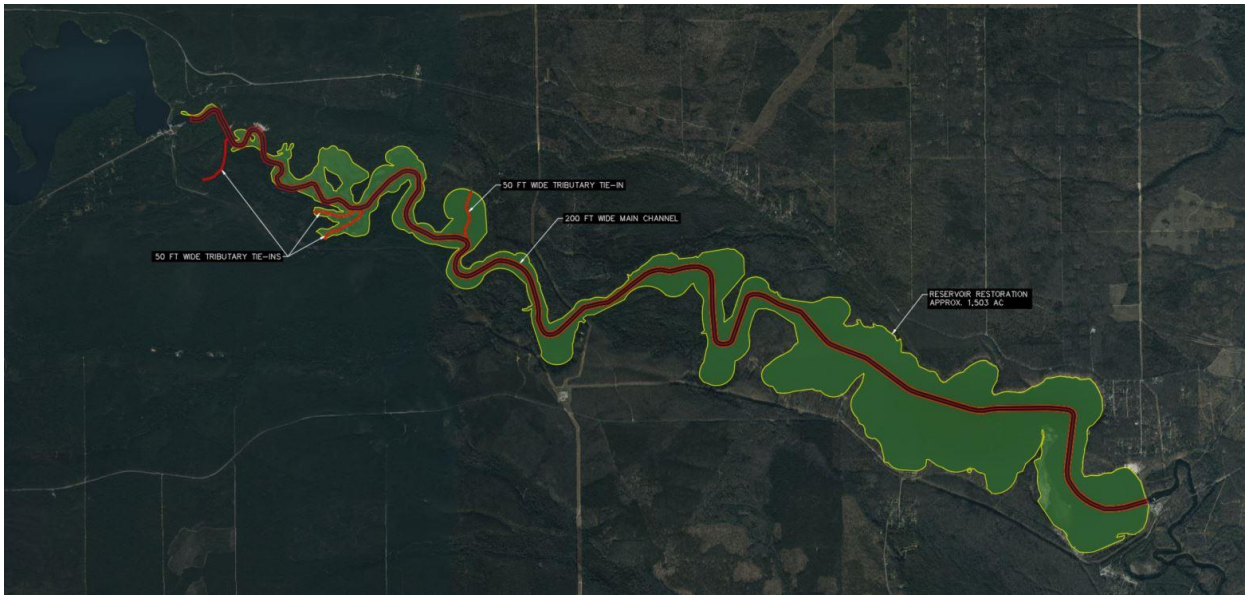
Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
    - Reduces legal liability and maintenance of existing facilities.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - It is unlikely that the Foote Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
    - Installing a new dam/weir structure will preserve the primary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Emergency spillway and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405.
    - May also still cause sediment transport issues. The Foote Dam should be removed after removal of all upstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - Archeological sites are also reported to be contained within the project area, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
        - There are several homes located along the reservoir edge that are part of the Bissonette subdivision and Seven Mile Hill HOA, many of which have their own private boat docks.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potential DO).
  - Eliminates sediment transport issues
  - It is unlikely that the Foote Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Foote Dam should be removed after all upstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
  - The dam serves as a primary barrier to invasive species attempting to travel upstream from Lake Huron. Additional costs may be required to install sea lamprey control barriers (such as the FishPass system by the Great Lakes Fishery Commission).

- Public disapproval of this option due to its socioeconomic and recreational impact.
    - Archeological sites are also reported to be contained within the project area, which may create additional resistance to the dam removal.
- Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
    - There are several homes located along the reservoir edge that are part of the Bissonette subdivision and Seven Mile Hill HOA, many of which have their own private boat docks.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - Keeping the dam in place will preserve the primary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405. Significant costs may be required bring the water temperature into compliance to support cold water fisheries.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender to test the market and negotiate with potential buyers.

APPENDIX B.12

Webber Dam
FERC No. P-2566

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- Two, 32-foot-high earth embankment dam sections, each with a concrete core wall and totaling 730 feet in length.
- A 33-foot-high concrete spillway with ten steel radial gates and a fixed-crest overflow section which discharge to a concrete apron extending approximately 105 feet downstream.
- A reservoir with a normal surface area of 660 acres at elevation 684.4 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 6,000 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 3,250 kilowatts (kW).
- A 186-foot-long concrete-lined tailrace with retaining walls and downstream weir.
- Associated appurtenant structures.
- Fish ladder owned and operated by Michigan DNR (not in FERC license)
- Canoe portage trail around west side of dam.
- One to two dozen private residences/docks on reservoir



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Considerable fisheries resource issues
- Considerable Public Recreation Facilities
- Limited private property adjacent to shoreline

Future License Conditions

- Operations monitoring/automation
- Recreation monitoring or enhancements
- RTE and Wildlife Species Management Plans
- Invasive vegetation monitoring plan
- Fish stocking/funding
- Recreation enhancements (portage improvements, paddler trail opportunities)
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational restrictions (run-of-river monitoring, seasonal shutdowns)
- Seasonal shutdown (April) for downstream salmonid smolt migration

Risks to Operating under another 50-year License

- Invasive fish passage if downstream barriers are removed
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Webber Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo,” The exterior and interior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. While no immediate major repairs are required, additional maintenance and monitoring is recommended to prevent further need for repairs.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 28 and 29, 2018 and consisted of the above-water concrete features/structures (Downstream Left Embankment Retaining Wall Segments 1 and 2, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Downstream Spillway Apron (Exposed), Downstream Triangle, Fish Ladder, Fixed Crest Spillway, Left Wing Wall/Abutment, Right Wing Wall/Abutment, Spillway Abutment, Spillway, Piers, and Weir - Left

Segment and Right Segment, Training Wall Segments 1 and 2, Upstream Spillway Piers, Upstream Triangle).

The key findings from the Webber condition assessment identified one site feature (segment 2 of the training wall) that was rated as ORANGE (1 to 3 years before major repairs or replacement is necessary). One site feature (segment 1 of the training wall) was rated as BLUE (5 to 10 years before major repairs or replacement is necessary). Continued monitoring of segment 2 of the left embankment retaining wall is recommended to determine if the movement noted during the inspection is on-going. In addition, periodic maintenance including cleaning and sealing of the joints in the downstream left embankment retaining wall, fixed crest spillway and between the spillway abutment and left embankment retaining wall is recommended. Other structures that were inspected during this condition assessment and are included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- July 20-21 and September 28, 2022:
    - The underwater portions of the Webber Hydroelectric Dam were in overall good condition. All features/structures were given a green rating, indicating that that major repair will not be needed for about 10 to 20 years. Deficiencies were limited to spalling, concrete aggregate pop-outs, minor to moderate cracking, surface scaling/erosion, and concrete surface flaking.
    - Additional underwater monitoring is recommended every 5 years. Continued removal of debris from the upstream powerhouse trash racks and spillway is also recommended.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement. The exception to this is the potential for repair of the tumble bay slab pending the study to determine the mechanism causing voids.

Current Remediation Projects in LTFP

- Unit 1 Overhaul and Generator Rewind – Capital
- Left Downstream Spillway Abutment Wall Replacement – Capital

- Unit 2 2400V Switchgear Replacement – Capital
- Unit 1 Concrete Repairs – O&M

Remediation Projects not in LTFP

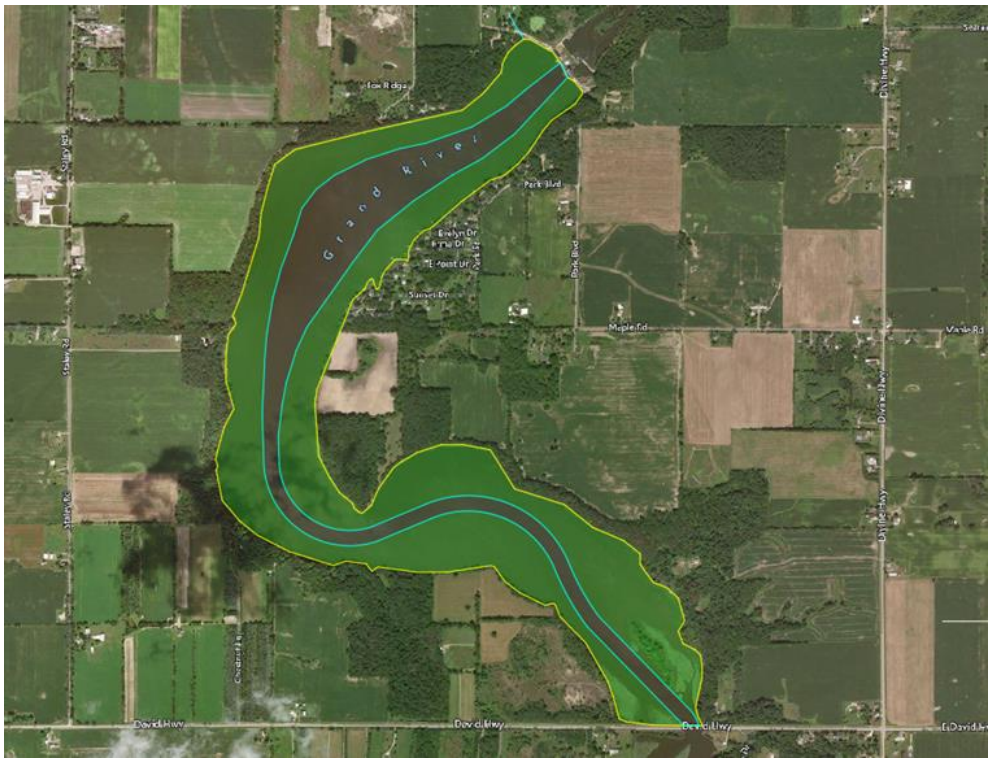
- Upstream Triangle Concrete Wall Remediation
- Right Embankment Toe Seepage Repair
- Core Wall Extension
- Unit 2 Bolt Replacement
- Draft Tube Concrete Repairs
- Downstream Powerhouse Pier Concrete Repairs
- Unit 2 Concrete Repairs

Generation

The Webber development consists of 2 units with a calculated maximum generation capacity of 37,668 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 11,271 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 18,900 MWH.

Surrendering (projected to 2041 at end of licensing period and following FERC decommissioning process)

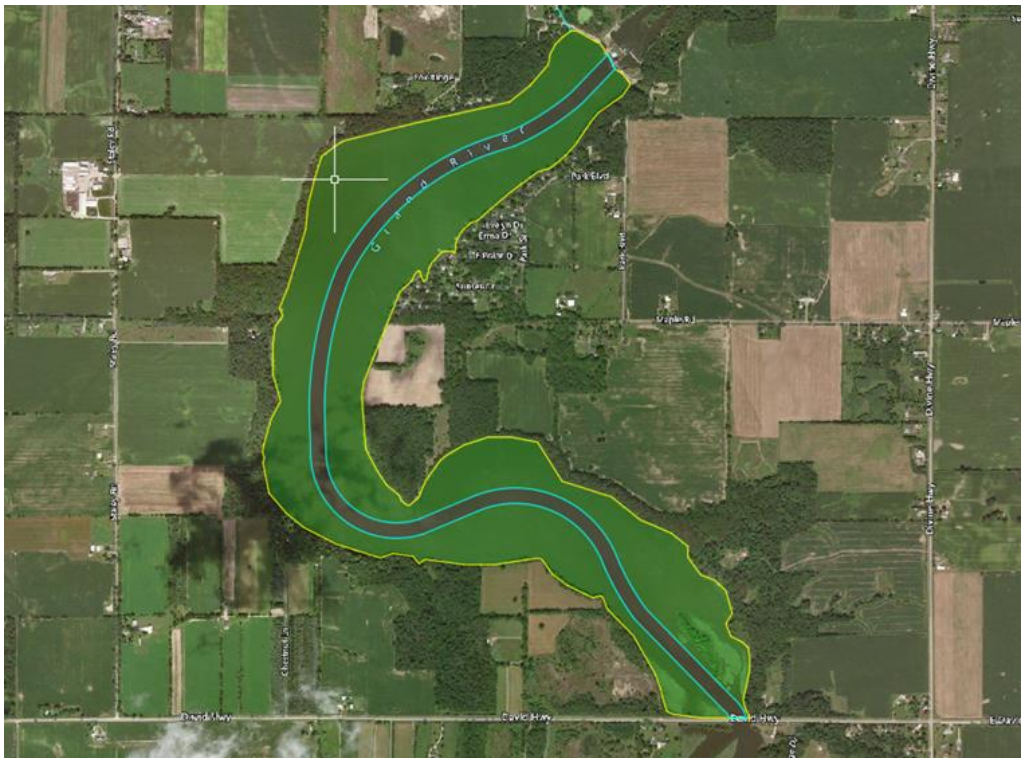
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish ladder already installed.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - This option will require significant coordination with regulatory agencies and external stakeholders due to changes in land use, majority of surrounding property is residential
  - New fish passage installation required.
  - May also still cause sediment transport issues.
  - Public disapproval of this option due to its socioeconomic and recreational impact (does not solve issue of poo portage for anglers and recreational boaters and paddlers).

- May serve as sea lamprey barrier with recent removal of Lyons Dam and potential removal of the partially failed Wager Dam downstream.
- Endangered unionid mussels at dam impoundment and tailwaters may be impacted by dam removal.
- Sediment release from removal may impact restoration conducted for Lyons Dam removal and potential Wager Dam removal downstream
- Impoundment may buffer water quality impacts associated with extensive upstream development, agriculture, septic issues, and point sources.
    - Potential for contaminated sediment removal and disposal will add significant cost burden.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists.

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish ladder already installed.
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.

  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates sediment transport issues
  - Improved portage for anglers and recreational boaters and paddlers. A new boat launch downstream of Webber Dam is desired by the community now that the downstream Lyons Dam has been removed, but full removal of Webber may solve this issue.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - May serve as sea lamprey barrier with recent removal of Lyons Dam and potential removal of the partially failed Wager Dam downstream.
  - Endangered unionid mussels at dam impoundment and tailwaters may be impacted by dam removal.
  - Sediment release from removal may impact restoration conducted for Lyons Dam removal and potential Wager Dam removal downstream
  - Impoundment may buffer water quality impacts associated with extensive upstream development, agriculture, septic issues, and point sources.
    - Potential for contaminated sediment removal and disposal will add significant cost burden.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden
  - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
  - Contaminated sediments do not need to be removed and transported offsite.
  - Fish ladder already installed.
  - No disturbance to endangered unionid mussels found in dam impoundment and tailwaters.
  - Serves as sea lamprey barrier if partially failing Wager Dam is removed downstream.
- Cons/Risks
  - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - Future repairs to dam structure.
  - Transport of sediment and woody debris is also not improved through this option.

Divesting

Relicensing decision is further out than the Au Sable, Manistee, and Muskegon River projects. Putting this project on the market as part of a large portfolio is a near term action that can inform the next decisions. There is time before having to make a decision on relicensing or surrender.

APPENDIX B.13

Allegan (Calkins Bridge) Dam
FERC No. P-785

Submitted to:

Consumers Energy Company

1945 W. Parnall Road

Jackson, Michigan USA 49201

Submitted by:

WSP

809 Delta Avenue, Gladstone, Michigan USA 49837

+1 906-420-840

April 2023

Site Characteristics

- A 30-feet-high earth embankment dam section totaling 1,335 feet in length.
- A 132-feet-long concrete spillway with six steel radial gates which discharge to a concrete apron extending approximately 54 feet downstream.
- A reservoir with a normal surface area of 1,550 acres at elevation 615.0 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 17,000 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 2,550 kilowatts (kW).
- A 58-feet-long concrete-lined tailrace with retaining walls.
- Associated appurtenant structures.
- Low Hazard classification dam: Allegan Dam Road crosses across the top of or near the dam with integrated structural connections to the dam incorporated into design.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Indiana bat & Kerner Blue butterfly potential
- Potential archaeological resources
- Considerable Recreation use and access from MDNR Facilities
- Popular fishery downstream of dam
- Shoreline management and private property ownership
- Sediment pollution from upstream super fund site.

Future License Conditions

- Operations monitoring, automation and compliance
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational run-of-river

Risks to Operating under another 50-year License

- Fish ladder was blocked with a removable plug in 1999 is a likely topic to investigate in next relicensing; however, Allegan may be best without it to limit invasive fish access and due to toxic sediments and fish consumption advisories in the Kalamazoo River
- Potential for temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
    - Operational monitoring for run-of-river, lake levels, and gage and instrumentation
    - Lake Sturgeon Spawning Habitat Enhancement Plan and a Reservoir Drawdown Management Plan
    - Downstream fish passage protection (existing racks 1.5 inch spacing)
    - Water quality monitoring downstream of the project and analyzing sediments and fish tissue in Lake Allegan for various contaminants, including total mercury and polychlorinated biphenyls (PCBs).
    - Plan to monitor and, where appropriate, control or eliminate invasive species and to implement measures to protect the Indiana bat, including restrictions on removing dead or dying trees near the shoreline.
    - Implement a Historic Properties Management Plan
    - Recreation: majority of use and access is provided by MDNR
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites.
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Allegan Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The exterior and interior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. While no immediate major repairs are required, additional monitoring of cracks along interior columns and displacement of the exterior walkway is recommended.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 28, 2018 and consisted of the above-water concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Left Wing Wall/Abutment, Log Chute, Right Wing Wall/Abutment, Spillway Abutment, Spillway and Downstream Spillway Piers, Spillway Structural Walkway Deck, Upstream Powerhouse Piers, Upstream Spillway Piers). The findings were summarized in a condition assessment report for Allegan Hydroelectric Dam (dated May 14, 2019).

The structures that were inspected during this condition assessment and are included in this report were generally found to be in good condition and given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTION

- July 7, 2021, and August 10, 2022 Underwater Condition Assessment
    - The underwater portions of the Calkins Bridge Hydroelectric Dam in overall good condition. All features/structures inspected were given a green rating, indicating that that major repair will not be needed for about 10 to 20 years. Deficiencies were limited to minor spalls, concrete aggregate pop-outs, minor cracking, surface scaling/erosion, and concrete surface flaking.
    - A vertical crack was observed in the upstream right wingwall, which was not observed in the 2016 underwater inspection. Additional monitoring of a vertical crack in the upstream right wingwall is recommended every 5 years. Continued removal of debris from the upstream powerhouse trash racks and spillway is also recommended.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement.

Current Remediation Projects in LTFP

- Unit 1 Wicket Gate Replacement - Capital
- Powerhouse Roof Replacement – Capital
- Unit 3 Static Exciter Replacement – Capital
- 199 Breaker Replacement - Capital
- Units 1, 2, and 3 Governor Replacements – Capital
- Bridge Inspection (Structures and Improvements) – O&M
- Tailrace Access Safety Ergonomics – O&M

Remediation Projects not in LTFP

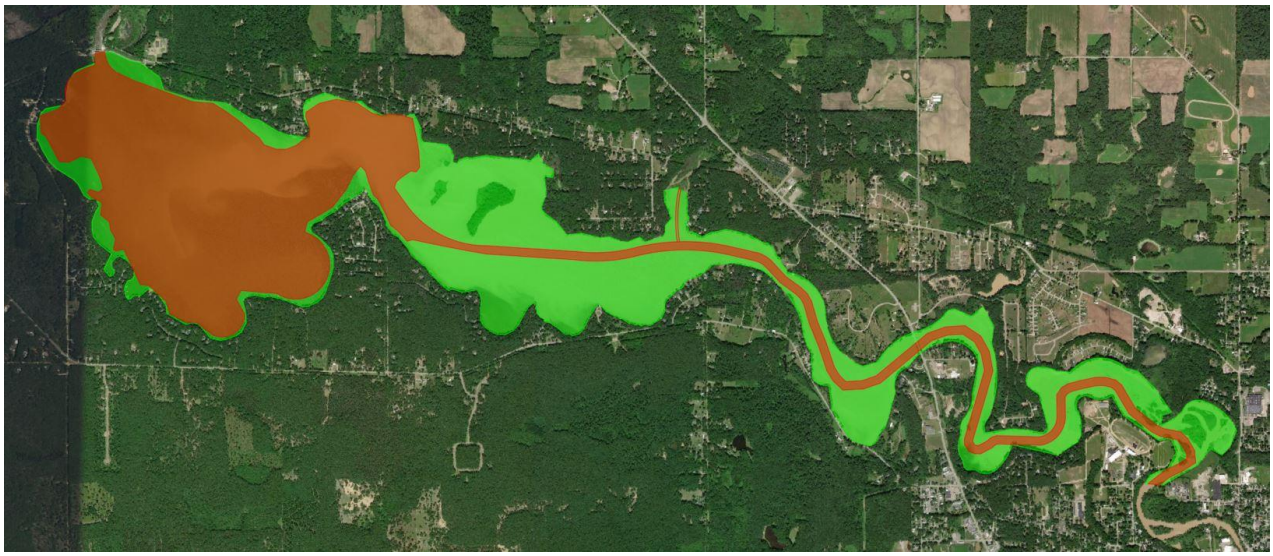
- Trash Rack Remediation
- Intake Concrete Repairs
- Powerhouse Concrete Repairs (From replacing wooden gates)
- Crane Remediation
- Units 1, 2, and 3 Concrete Repairs
- Back Deck Concrete Repairs
- Possible Bridge Replacement

Generation

The Allegan development consists of 3 units with a calculated maximum generation capacity of 22,338 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 13,628 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 15,432 MWH.

Surrendering (projected to 2040 at end of licensing period and following FERC decommissioning process)

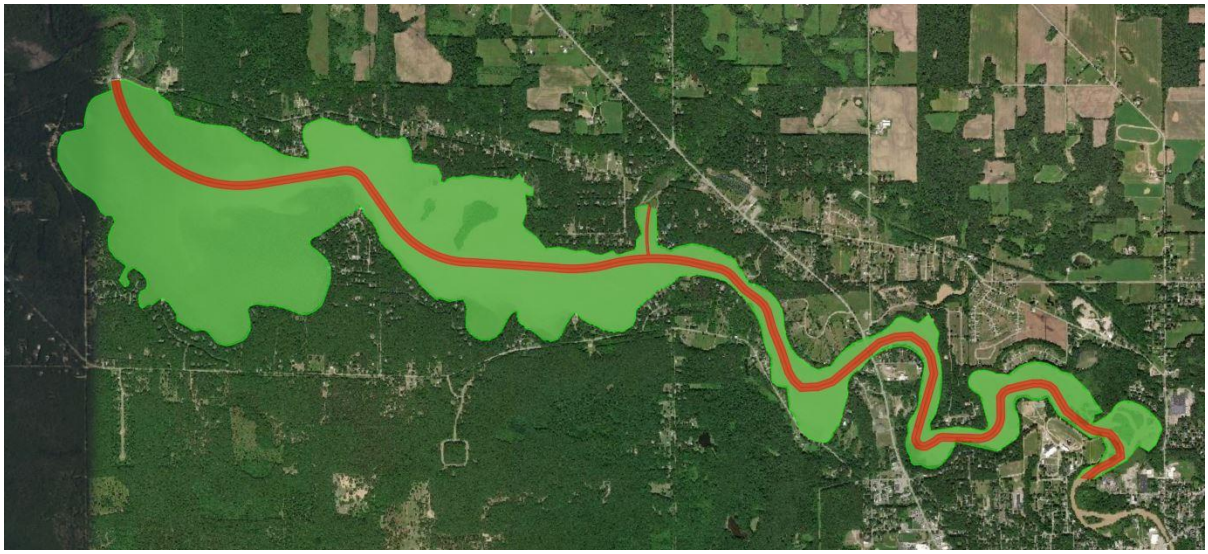
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - This option will require significant coordination with regulatory agencies and external stakeholders due to changes in land use, majority of surrounding property is residential
  - The dam and reservoir fall within the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
    - EPA is currently working to remediate the Kalamazoo River, but this portion has not yet been reached. The dam is in Area 6 of Operable Unit 5 (OU5) in the cleanup plan. The EPA has completed cleanup on OU2, OU3, and OU4. Currently there are cleanup plans in place for OU1, OU7, and Areas 1, 2, and 3 of OU5. None are in place for Area 6 OU5 at this time.
  - Fish passage installation required. Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.

- Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
- May also still cause sediment transport issues.
- Public disapproval of this option due to its socioeconomic and recreational impact.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and DO).
  - Eliminates sediment transport issues

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Potential for contaminated sediment removal and transport which will create a significant cost burden.
    - Barrier system should be installed to prevent upstream migration of invasive species (sea lamprey and round goby); refer to FishPass System example by Great Lakes Fishery Commission.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage would not be addressed directly but requires installation of fish passage system; potential discontinuation of MDNR stocking.
    - Contaminated sediments do not need to be removed and transported offsite.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Potential fish passage requirements.
    - Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405. Upwelling system installation may add cost burden.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Relicensing decision is further out than the Au Sable, Manistee, and Muskegon River projects. Putting this project on the market as part of a large portfolio is a near term action that can inform the next decisions. There is time before having to make a decision on relicensing or surrender.

CONSUMERS ENERGY COMPANY

AU SABLE RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE



Mio Hydroelectric Project
(FERC No. P-2448)



Alcona Hydroelectric Project
(FERC No. P-2447)



Loud Hydroelectric Project
(FERC No. P-2449)



Five Channels Hydroelectric Project
(FERC No. P-2453)



Cooke Hydroelectric Project
(FERC No. P-2450)



Foote Hydroelectric Project
(FERC No. P-2436)

NOVEMBER 2024; REVISED OCTOBER 2025

AU SABLE RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE

CONSUMERS ENERGY COMPANY

PROJECT NO.: US0038224.9874
DATE: OCTOBER 2025

WSP

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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 3

2.1 Mio Dam 3

2.2 Alcona Dam 4

2.3 Loud Dam 4

2.4 Five Channels Dam 4

2.5 Cooke Dam 4

2.6 Foote Dam 4

3 STUDY APPROACH 6

3.1 Assumptions 6

3.2 Limitations 6

4 COST ESTIMATE SUMMARY 8

4.1 Class Estimates 8

4.1.1 Class 5 Estimate 8

4.2 Cost Estimate Summaries 8

4.2.1 Quantities and Unit Costs 8

4.2.2 Uncertainty Areas 8

4.2.3 Mio Dam Cost Estimate Activities 9

4.2.4 Alcona Dam Cost Estimate Activities 17

4.2.5 Loud Dam Cost Estimate Activities 25

4.2.6 Five Channels Dam Cost Estimate Activities 33

4.2.7 Cooke Dam Cost Estimate Activities 41

4.2.8 Foote Dam Cost Estimate Activities 49

4.2.9 Cost Estimate Results Summary 57

BIBLIOGRAPHY 63

TABLES

TABLE 4.1 MIO DAM COST ESTIMATE ACTIVITIES BY SCENARIO 9
TABLE 4.2 ALCONA DAM COST ESTIMATE ACTIVITIES BY SCENARIO 17
TABLE 4.3 LOUD DAM COST ESTIMATE ACTIVITIES BY SCENARIO 26
TABLE 4.4 FIVE CHANNELS DAM COST ESTIMATE ACTIVITIES BY SCENARIO 33
TABLE 4.5 COOKE DAM COST ESTIMATE ACTIVITIES BY SCENARIO 41
TABLE 4.6 FOOTE DAM COST ESTIMATE ACTIVITIES BY SCENARIO 49
TABLE 4.7 MIO DAM COST ESTIMATE RESULTS SUMMARY 57
TABLE 4.8 ALCONA DAM COST ESTIMATE RESULTS SUMMARY 58
TABLE 4.9 LOUD DAM COST ESTIMATE RESULTS SUMMARY 59
TABLE 4.10 FIVE CHANNELS DAM COST ESTIMATE RESULTS SUMMARY 60
TABLE 4.11 COOKE DAM COST ESTIMATE RESULTS SUMMARY 61
TABLE 4.12 FOOTE DAM COST ESTIMATE RESULTS SUMMARY 62

APPENDICES

A MIO DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 MIO DAM SITE SUMMARY

A-2 MIO DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

A-3 MIO DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

A-4 MIO DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B ALCONA DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

B-1 ALCONA DAM SITE SUMMARY

B-2 ALCONA DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

B-3 ALCONA DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B-4 ALCONA DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

C LOUD DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

C-1 LOUD DAM SITE SUMMARY

C-2 LOUD DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

C-3 LOUD DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

C-4 LOUD DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

D FIVE CHANNELS DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

D-1 FIVE CHANNELS DAM SITE SUMMARY

D-2 FIVE CHANNELS DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

D-3 FIVE CHANNELS DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

D-4 FIVE CHANNELS DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

E COOKE DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

E-1 COOKE DAM SITE SUMMARY

E-2 COOKE DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

E-3 COOKE DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

E-4 COOKE DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

F FOOTE DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

F-1 FOOTE DAM SITE SUMMARY

F-2 FOOTE DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

F-3 FOOTE DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

F-4 FOOTE DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

1 EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets. To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

This report details the surrendering considerations and pricing considered in the roadmap for 6 of the 13 hydropower facilities located within the Au Sable River Watershed, including the including Mio Dam in Oscoda County, Alcona Dam in Alcona County, and Loud, Five Channels, Cooke and Foote Dams in Iosco County.

Three surrender scenarios with specific assumptions were considered in preparing the cost estimates for each surrender option:

- Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
- Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
- Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

For each facility and scenario, a class 5 cost estimate was prepared in Q4 2022 dollars, identifying and quantifying the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and

regulated material removal, environmental and restoration work of the AuSable River, as well as associated project indirect costs and recommended contingency. Schematics utilized for the evaluation of the Surrender and Decommission – Partial and Full Removal for how the reservoir may be reshaped in the decommissioning restoration are presented. Additional assumptions and limitations by site are presented herein.

2 INTRODUCTION

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added. This report details costs and considerations prepared for 3 of the 13 hydropower facilities located along the Au Sable River system, including Mio in Oscoda County, Alcona Dam in Alcona County, Loud Dam, Five Channels Dam, Cooke Dam, and Foote Dam in Iosco County.

The Au Sable River system rises in the Northern Lower Peninsula of Michigan, the river flows in a generally southeasterly direction to its mouth at Lake Huron. It incorporates 5 counties including Otsego, Crawford, Oscoda, Alcona, and Iosco. The Au Sable River watershed drains more than 1,900 square miles of land area and runs approximately 130 miles.

The three surrendering scenarios include:

- Surrender – No-Power Generation
- Surrender and Decommission – Partial Removal
- Surrender and Decommission – Full Removal.

The objective of the conceptual decommissioning cost estimate is to identify the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental work, and restoration of the Au Sable River, as well as associated project indirect costs and recommended contingencies.

2.1 MIO DAM

The Mio dam (FERC Project Number 2448), located in the Au Sable River in Mio Township, Oscoda County, Michigan consists of two, 40-foot-high earth embankment dam sections, each with a concrete core wall. A 17-foot-high concrete spillway with one, 12.7-foot-high steel radial gate and a concrete-lined discharge channel extending approximately 220 feet downstream with a 6.5-foot-high concrete weir located approximately 45 feet downstream. A 530-foot-long auxiliary spillway located at the end of the south embankment dam. A 185-foot-long concrete tailrace with retaining walls. The reservoir, with a normal surface area of 661 acres at elevation 962.6 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 6,061 acre-feet.

Additionally, the dam includes a concrete and masonry powerhouse containing two generating units with a total installed capacity of 3,885 kW. The powerhouse also contains two spill tubes used primarily as the service spillway. Both spill tubes are operational at this time.

2.2 ALCONA DAM

The Alcona dam (FERC Project Number 2447), located in the Au Sable River in Curtis Township, Alcona County, Michigan consists of two, 60-feet-high earth embankment dam sections, each with a concrete core wall, and a 250-feet-long emergency spillway located at the end of the east embankment.

Additionally, the dam includes a reservoir with a normal surface area of 1,006 acres at elevation 829.0 feet (USGS datum) with a gross storage of 12,547 acre-feet, a concrete and masonry powerhouse containing two generating units with a total installed capacity of 7,905 kW, and a 135-foot-long concrete tailrace with retaining walls. The powerhouse also contains six spill tubes used primarily as the service spillway.

2.3 LOUD DAM

The Loud dam (FERC Project Number 2449), located in the Au Sable River in Iosco County, Michigan consists of two, 42-foot-high earth embankment dam sections, each with a concrete core wall, a 20-foot-high concrete service spillway with three, 15.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 6.5-feet-high concrete weir located approximately 45 feet downstream, and a 100-feet-long emergency spillway.

The dam maintains a reservoir with a normal surface area of 743 acres at elevation 742.6 feet (USGS datum) with a gross storage of 6,987 acre-feet, as well as concrete-and-masonry powerhouse containing two generating units with a total installed capacity of 4,000 kW, and a 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 125 feet downstream.

2.4 FIVE CHANNELS DAM

The Five Channels dam (FERC Project Number 2453), located in the Au Sable River in Iosco County, Michigan consists of two, 45-feet-high earth embankment dam sections, each with a concrete core wall and a 25-foot-high concrete service spillway with three, 14.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 8-foot-high concrete weir located approximately 60 feet downstream. The reservoir, with a normal surface area of 212 acres at elevation 715.0 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 3,419 acre-feet.

Additionally, the dam includes a concrete and masonry powerhouse containing two generating units with a total installed capacity of 5,966 kW with a 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 120 feet downstream

2.5 COOKE DAM

The Cooke dam (FERC Project Number 2450), located in the Au Sable River in Oscoda Township, Iosco County, Michigan consists of two, 50-feet-high earth embankment dam sections, each with a concrete core wall, a 25-foot-high concrete service spillway with three, 15-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 11.5-foot-high concrete weir located approximately 50 feet downstream.

Additionally, the dam includes a reservoir with a normal surface area of 1,627 acres at elevation 678.5 feet (USGS datum) with a gross storage of 26,749 acre-feet, a concrete and concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 7,500 kW with an approximately 120-foot-long concrete tailrace with retaining walls.

2.6 FOOTE DAM

The Foote dam (FERC Project Number 2436), located in the Oscoda Township, Iosco County, Michigan consists of two, 55-

feet-high earth embankment dam sections, each with a concrete core wall, and a 30-feet-high concrete service spillway with three, 14.5-feet-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 12-feet-high concrete weir located approximately 65 feet downstream.

Additionally, the dam includes a reservoir with a normal surface area of 1,702 acres at elevation 639.2 feet (USGS datum) with a gross storage of 32,380 acre-feet, a concrete and concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 7,229 kilowatts (kW) with a 25-feet-long concrete apron in the tailrace with concrete and sheet pile (right downstream side only) retaining walls extending 165 and 290 feet downstream, respectively.

3 STUDY APPROACH

3.1 ASSUMPTIONS

WSP analyzed the costs for three scenarios involving the surrender of the hydropower facilities before the current license expires. These scenarios include 1) Surrender – No-Power Generation: 2) Surrender and Decommission – Partial Removal; and 3) Surrender and Decommission – Full removal. Detailed description of these alternatives are as follows:

Surrender – No Power Generation Operation

The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.

Surrender and Decommission - Partial Removal

The partial removal scenario evaluates the partial removal of the dam by reducing the earthen dam structure while fully removing the powerhouse and generation facilities. This reduction would create a sufficient breach to pass the 100-year flood through the reestablished river channel, ensuring that the incremental rise at the dam site would be less than 0.10 foot. This scenario also considers the potential to maintain some form of upstream reservoir system while developing a new weir control structure.

This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated.

Schematics for the partial removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through F.

Surrender and Decommission - Full Removal

The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities, earthen dam, concrete spillway, tailrace and retaining structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions. To minimize the transport and improve stabilization of the sediment within the reservoir, the reservoir would be drawn down in a controlled manner. Hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly.

Schematics for the full removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through F.

3.2 LIMITATIONS

- Prior costs provided by Consumers for these scenarios and developed by Kiewit Corporation in 2022, as available, and Mead & Hunt (M&H) in 2021 were used as the foundation of these estimates. Sequencing of work follows the descriptions as detailed by M&H with additional measures incorporated following removal as part of the reservoir restoration. Estimates were supplemented and expanded based on similar experiences from other applicable dam removal projects.
- Information related to sediment volumes and characterization are estimated and assumed based on watershed research for potential hazardous contamination. As no data is available at this time, there is significant risk associated with the uncertainty to the volumes and level of contamination for management. Unless documentation of known hazardous spills were identified for the watershed, it was considered as a mix of non-

contaminated and contaminated non-hazardous sediments for removal and disposal, as detailed herein. Sediment investigations would occur after a decision to surrender and decommission were approved.

- These estimates are based on Q4 2022 dollars at the time of preparation.
- Cost estimates, by nature, are as best as the information available at the time of preparation. Estimates should be reconsidered and updated as new information is obtained and as market conditions change.
- Additional assumptions and limitations considered for each cost item to derive the presented unit pricing and quantity are detailed herein.

4 COST ESTIMATE SUMMARY

4.1 CLASS ESTIMATES

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, costs accuracy is generally assumed to increase as project development nears completion. As such construction stage cost estimates are necessarily considered the most accurate and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE). The level of information or considerations prepared for this independent evaluation, with limitations, would be considered as Class 5 estimate per AACE.

4.1.1 CLASS 5 ESTIMATE

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its accuracy ranges -50% on the low side and +100%on the high side.

Class 5 cost estimate accuracy range: -50% to +100%

Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

4.2 COST ESTIMATE SUMMARIES

Costs for each surrender scenario were calculated for (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. Detailed descriptions for each item under each scenario are provided below.

All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (4th Quarter 2022 levels) if prepared by WSP. Pricing evaluated and utilized by the previous studies are based on costs at the time of their preparation (e.g. 2021 and early 2022). No price escalation was applied due to proximity in date of preparation and class 5 level estimate being prepared. The conceptual decommissioning cost estimates for each scenario by dam location are included in Appendix A through F.

4.2.1 QUANTITIES AND UNIT COSTS

Quantities of pieces of equipment and/or bulk material commodities used in the cost estimates were intended to be reasonable and representative of projects of this type. Material quantities were prepared by M&H in 2021 for categorial items included within their estimate. As appropriate, WSP simplified unit measurements and unit pricing for subject activities. For additional activity items incorporated by WSP, quantities were estimated from the schematic renderings prepared for each site and included within Appendix A through F, as detailed below. Upon determining corrective unit quantities and unit costs, cost components for each activity were determined by the multiplication of the unit quantity by unit cost, rounded to the nearest whole dollar.

4.2.2 UNCERTAINTY AREAS

This estimate will be based on similar experiences from other projects. Therefore, some specific information about each site is unknown. Additional studies would be needed to determine physical and chemical characteristics of soils and

sediments, potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures, type of vegetation and presence of non-native species, archaeological resources and historic structures, hydrology and hydraulic characteristics, as well as ecology and biology upstream and downstream of the structures.

4.2.3 MIO DAM COST ESTIMATE ACTIVITIES

Table 4.1 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.1 Mio Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
	Move Distribution Lines from Plant Bus		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Storage Building		X	X
	Remove Septic Tank / Drain Field		X	X
	Removal of Right Downstream Fishing Pier: Reinforced Concrete Demolition		X	X
	Removal of Right Downstream Fishing Pier: Sheet Piling Removal		X	X
	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Trash Rack Rake System		X	X
	Remove Fixtures		X	X
	Remove Electrical Equipment		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Trash Racks		X	X
	Remove Valves		X	X
	Remove Trash Rack Platforms		X	X
	Remove Gates		X	X
	Demolish and Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demolition		X	X
	Remove Spillway Gates		X	X
	Remove Hoist Rail		X	X
	Remove Spillway Hoists		X	X
	Drain 661-Acre Reservoir		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		
	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
Abatement and Regulated Material Removal	Remove Contaminated Sediments - Removal		X	X
	Remove Contaminated Sediments - Disposal		X	X
Salvage	Salvage		X	X
Environmental and Restoration	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Installation of Fish Passage	X	X	
	Precast Concrete Stoplogs Installation	X		
	Water Conduit Sand Installation	X		
	Modify Spillway to Maintain Flow/Pond Level	X		
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Mio Plant would be demolished and therefore, electricity would no longer be required.

Move Distribution Lines from Plant Bus

Price per linear foot was taken from the M&H estimate to move distribution lines from plant bus. The partial and full removal options assume that the Mio Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary.

Remove Storage Building

Lump sum cost was taken from the M&H estimate. The onsite storage building will be demolished and disposed of offsite for all three scenarios.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Removal of Right Downstream Fishing Pier: Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios includes demolition of the right downstream fishing pier, including the reinforced concrete substructure. All the demolished material would be transported offsite for disposal in a designated landfill area.

Removal of Right Downstream Fishing Pier: Sheet Piling Removal

Cost per square foot was taken from the M&H estimate. Under the full removal option, the right downstream fishing pier sheet pilling would be removed entirely. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 26 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Rack Rake System

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks rake system would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios includes demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Rack Platforms

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks platforms would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoist Rail

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoist rails would be removed during decommissioning and transported to an off-site disposal area.

Remove Spillway Hoist

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway hoist would be removed during decommissioning and transported to an off-site disposal area.

Drain 661-Acre Reservoir

Lump sum cost was taken from the M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse during removal of the powerhouse structure, intake tower, penstocks, and a section of the embankment dam. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Once these elements of the project have been removed, the embankment dam would be breached sufficiently to allow the 100-year-flood flow to pass through the natural river channel located to the right of the powerhouse structure.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Cost per square foot was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. It is assumed that the 300-foot-wide main channel will be re-established with limited dredging. According to M&H's opinion, approximately 1,048,407 cubic yards of material will need to be removed to clear fine-grain sediments and re-establish the channel where necessary beyond the pilot channel. This amount is prorated at 85% to account for limited dredging within the new impoundment for the partial removal. For secondary tributary connections, which total 36,000 linear feet, it is assumed that dredging will occur at a width of 50-feet and an average depth of 4-feet, resulting in an estimated 300,000 cubic yards of material to be removed.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This item includes the demolition of reinforced concrete associated with this removal. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Cost per square foot was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost from M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance would be decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as CFCs and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance would be decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as CFCs and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove Contaminated Sediments – Removal

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from 10% of the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Remove Contaminated Sediments – Disposal

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Salvage

Lump sum cost derived from M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container, 1-2' high.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was estimated based on similar projects. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 20% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 80% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the AuSable River, as well as both banks for all tributary lengths.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Channel Creation - Riffle Section at Downstream Tie In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 200-feet-wide, 600-feet-long, and 2-feet-deep for the full removal and partial removal. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 20-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 9-vertical-foot drop in water height is considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost derived from M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Owner's Cost

An owner's cost of 15% of the construction subtotal, less the contaminated material disposal cost, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $260,565 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

oval scenario, 3.5% of the construction subtotal (excluding contaminated sediment disposal costs) with an for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social d be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (excluding contaminated sediment disposal costs) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal costs) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.4 ALCONA DAM COST ESTIMATE ACTIVITIES

Table 4.2 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.2 Alcona Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
	Move Distribution Line from Plant Bus		X	X
	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Plug and Abandon Artesian Wells		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Fixtures		X	X
	Remove Hoists		X	X
	Remove Electrical Equipment		X	X
	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Trash Racks		X	X
	Remove Valves		X	X
	Remove Gates		X	X
	Drain 1,006-Acre Reservoir		X	X
Decommissioning and Demolition	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		
	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
	Modify Spill Tubes to Maintain Flow/Pond Level	X		
Abatement and Regulated Material Removal	Remove Contaminated Sediments - Removal		X	X
	Remove Contaminated Sediments - Disposal		X	X
Salvage	Salvage		X	X
Environmental	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Bank Stabilization - Hard Structure		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
and Restoration	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading and Surface Preparation / Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
Environmental and Restoration	Fish Passage	X	X	
	Spiral Case Enlargement	X		
Project Indirect	Owner's Cost	X	X	X
	Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Alcona Plant would be demolished and therefore, electricity would no longer be required.

Move Distribution Lines from Plant Bus

Price per linear foot was taken from the M&H estimate to move distribution lines from plant bus. The partial and full removal options assume that the Alcona Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 600 feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Plug and Abandon Artesian Wells

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 24 of the artesian wells would be either excavated and removed or abandoned and

capped below grade.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 10 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoists would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios will include demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Drain 1,006-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a

controlled manner through the powerhouse structure as it is demolished and removed in a staged process. The staged removal of the powerhouse would require the installation of a stoplog bulkhead frame upstream of one of the powerhouse bays. The bulkhead would allow the demolition of the upstream face of one of the powerhouse bays while maintaining the discharge capacity of the remaining spill tube and intake gate. Once the reservoir has been lowered to the powerhouse foundation level using the bulkhead stoplogs, the embankment dam would be breached to allow flows to pass through the natural river channel located to the left of the powerhouse. With the river diverted through the breached section of the embankment, the remaining powerhouse bays, guide walls and aprons would be removed.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. This activity accounts for the sheet pile cutoff, in which all of the sheet pile wall as part of the core wall will be removed and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the AuSable River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of the earth dam and core wall adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of the earth dam and core wall adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of the

embankment dam and core wall adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the generating capacity with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the electrical equipment with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Modify Spill Tubes to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity details modifications to the operation of the powerhouse spill tubes would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Remove Contaminated Sediments – Removal

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Remove Contaminated Sediments – Disposal

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Salvage

Lump sum cost derived from M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Spillway Site Restoration: Planting and Seeding

WSP derived cost for providing permanent seeding of restored spillway area for stabilization of sediment/soils and reservoir restoration, and WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils

and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot was adjusted based on similar project and unit quantity was derived from M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River, as well as both banks for all tributary lengths.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 600-foot-length is considered upstream of the revised water impounded area. For the full removal, a 1250-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Installation of Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to

maintain small amounts of upstream ponding.

Spiral Case Enlargement

Lump sum cost derived from M&H estimate. M&H scope of work for this cost activity details modifications during the Stage 1 drawdown, the turbine spiral case would be enlarged to divert flows during Stage 2.

Owner's Cost

An owner's cost of 15% of the construction subtotal, less contaminated sediment disposal costs, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $317,970 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal (excluding contaminated sediment disposal costs) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (excluding contaminated sediment disposal costs) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (excluding contaminated sediment disposal costs) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.5 LOUD DAM COST ESTIMATE ACTIVITIES

Table 4.3 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.3 Loud Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Fixtures		X	X
	Remove Hoists		X	X
	Remove Electrical Equipment		X	X
	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Trash Racks		X	X
	Remove Valves		X	X
	Remove Gates		X	X
	Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demolition		X	X
	Remove Spillway Gates		X	X
	Remove Spillway Hoists		X	X
	Drain 743-Acre Reservoir		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demo		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		
	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
Salvage	Salvage		X	X
Environmental and Restoration	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading and Surface Preparation Amendments		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Maintain Recreation Features		X	
	Installation of Fish Passage	X	X	
	Concrete Weir Installation		X	
	Spillway Gate Modification to Maintain Flow/Pond Level	X		
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
Project Indirect	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Loud Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 1,000-feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 15 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoists would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios will include demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demo

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity include demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the

spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Demolish And Remove Powerhouse Generator Hall

Cubic yard unit price was taken from the M&H estimate. The powerhouse generator hall would be completely removed under the full removal scenario. As part of the powerhouse generator hall removal, the hall will be demolished and disposed of offsite.

Remove Spillway Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway gates would be removed during decommissioning and transported to an off-site disposal area.

Remove Spillway Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway hoists would be removed during decommissioning and transported to an off-site disposal area.

Drain 743 -Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price and quantity was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the AuSable River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the generating capacity with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the electrical equipment with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Apply Erosion Control Measures - Silt Fence

Price per linear foot was adjusted based on similar projects and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials

(accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 20% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 80% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River, as well as both banks for all tributary lengths.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 300-foot-length is considered upstream of the revised water impounded area. For the full removal, a 600-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Installation of Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot drop and 3-foot footer) and 4-foot width.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost derived from M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Owner's Cost

An owner’s cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $225,289 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.6 FIVE CHANNELS DAM COST ESTIMATE ACTIVITIES

Table 4.4 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.4 Five Channels Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Office Building / Warehouses	X	X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Fixtures		X	X
	Remove Hoists		X	X
	Remove Electrical Equipment		X	X
	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Trash Racks		X	X
	Remove Valves		X	X
	Remove Gates		X	X
	Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demolition		X	X
	Remove Spillway Gates			X
	Remove Hoist Rail/Platform		X	X
	Remove Spillway Hoists			X
	Drain 212-Acre Reservoir		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		
	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
	Modify Spillway to Maintain Flow/Pond Level	X		
Salvage	Salvage		X	X
Environmental and Restoration	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Five Channels Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Office Buildings/Warehouses

Lump sum cost was taken from the M&H estimate. The onsite office buildings and warehouses will be demolished and disposed of offsite for all three scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 635-station of the access road to be removed.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 10 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoists would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios will include demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demo

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity include demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Remove Spillway Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway gates would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoist Rail/Platform

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoist rail and platform would be removed during decommissioning and transported to an off-site disposal area.

Remove Spillway Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway hoists would be removed during decommissioning and transported to an off-site disposal area.

Drain 212 -Acre Reservoir

Lump sum cost was taken from the M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse during removal of the powerhouse structure, intake tower, penstocks, and a section of the embankment dam. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Once these elements of the project have been removed, the embankment dam would be breached sufficiently to allow the 100-year-flood flow to pass through the natural river channel located to the right of the powerhouse structure.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cost per cubic yard was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. It is assumed that the 200-foot-wide main channel will be re-established with limited dredging. According to M&H's opinion, approximately 749,000 cubic yards of material will need to be removed to clear fine-grain sediments and re-establish the channel where necessary beyond the pilot channel. This amount is prorated at 85% to account for limited dredging within the new impoundment for the partial removal. For secondary tributary connections, which total 400 linear feet, it is assumed that dredging will occur at a width of 50-feet and an average depth of 4-feet, resulting in an estimated 2,970 cubic yards of material to be removed.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This item includes the demolition of reinforced concrete associated with this removal. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the generating capacity with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the electrical equipment with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot was adjusted based on similar projects and unit quantity derived from M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 20% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 80% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the AuSable River, as well as both banks for all tributary lengths.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Channel Creation - Riffle Section at Downstream Tie In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 200-feet-wide, 890-feet-long, and 2-feet-deep for the full removal and the partial removal. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 95-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 9-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner’s cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $185,853 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal was applied. It is assumed the price for the

environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.7 COOKE DAM COST ESTIMATE ACTIVITIES

Table 4.5 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.5 Cooke Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Trash Rack Rake System		X	X
	Remove Fixtures		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Powerhouse Hoists		X	X
	Remove Electrical Equipment		X	X
	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Valves		X	X
	Remove Trash Racks		X	X
	Remove Powerhouse Gates		X	X
	Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demolition		X	X
	Remove Spillway Gates		X	X
	Remove Spillway Hoists		X	X
	Drain 1,627-Acre Reservoir		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		
	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
	Modify Spillway to Maintain Flow/Pond Level	X		
Salvage	Salvage		X	X
Environmental and Restoration	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
	Installation of Fish Passage	X	X	
Project Indirect	Owner's Cost	X		
	Baseline Studies, Engineering and Permitting	X		

generation scenario only, includes disabling the electrical equipment with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 20% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 80% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River, as well as both banks for all tributary lengths.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Cooke Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 600 feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 7 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Rack Rake System

Price per ton was taken from the from the M&H estimate. Under the partial and full removal options, trash racks rake system would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Powerhouse Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, powerhouse hoists would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios includes demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Powerhouse Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, powerhouse gates would be removed during decommissioning and transported to an off-site disposal area.

Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demo

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity include demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Remove Spillway Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway gates would be removed during decommissioning and transported to an off-site disposal area.

Remove Spillway Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway hoists would be removed during decommissioning and transported to an off-site disposal area.

Drain 1,627-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full

removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the AuSable River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the generating capacity with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, an 860-foot-length is considered upstream of the revised water impounded area. For the full removal, a 1,140-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Installation of Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner's cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $421,304 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design, and $742,985 to move the substation were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal with an additional $742,985 to move the substation were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.8 FOOTE DAM COST ESTIMATE ACTIVITIES

Table 4.6 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.6 Foote Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove Turbines		X	X
	Remove Generators		X	X
	Remove Cranes		X	X
	Remove Diesel Generator		X	X
	Remove Fixtures		X	X
	Remove Hoists		X	X
	Remove Electrical Equipment		X	X
	Reinforced Concrete/Masonry Demolition (Spill Tubes, Intake/Tailrace Retaining Walls, and Aprons)		X	X
	Remove Trash Racks		X	X
	Remove Valves		X	X
	Remove Gates		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demolition		X	X
	Remove Spillway Gates		X	X
	Remove Hoist Rails/Platform		X	X
	Remove Spillway Hoists		X	X
	Drain 1,7029-Acre Reservoir		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Leave Powerhouse Intact	X		
	Remove or Lay-up Equipment: Disable Generating Capacity	X		

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove or Lay-up Equipment: Remove Electrical Equipment	X		
Salvage	Salvage		X	X
Environmental and Restoration	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading and Surface Preparation Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Sea Lamprey Control/Fish Passage System			X
	Concrete Weir Installation		X	
	Installation of Fish Passage	X	X	
	Precast Concrete Stoplogs Installation	X		
	Modify Spillway to Maintain Flow/Pond Level	X		
Project Indirect	Construction Management, Biological Monitoring and O&M	X	X	X
	Construction Management	X	X	X
	Owner's Cost	X	X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Project Indirect	Engineering and Permitting	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Lines from Plant to Substation

Price per linear foot was taken from the M&H estimate for removal lines from the plant to the substation. The partial and full removal options assume that the Foote Dam Plant would be demolished and therefore, electricity would no longer be required.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 16 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove Turbines

Price per ton was taken from the M&H estimate. Under the partial and full removal options, turbines would be removed during decommissioning and transported to an off-site disposal area.

Remove Generators

Price per ton was taken from the M&H estimate. Under the partial and full removal options, generators would be removed during decommissioning and transported to an off-site disposal area.

Remove Cranes

Price per ton was taken from the M&H estimate. Under the partial and full removal options, cranes would be removed during decommissioning and transported to an off-site disposal area.

Remove Diesel Generator

Price per ton was taken from the M&H estimate. Under the partial and full removal options, the diesel generator would be removed during decommissioning and transported to an off-site disposal area.

Remove Fixtures

Price per ton was taken from the M&H estimate. Under the partial and full removal options, fixtures would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoists

Price per ton was taken from the M&H estimate. Under the partial and full removal options, hoists would be removed during decommissioning and transported to an off-site disposal area.

Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, electrical equipment would be removed during decommissioning and transported to an off-site disposal area.

Reinforced Concrete/Masonry Demolition Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Cubic yard unit price was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios includes demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Remove Trash Racks

Price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Demolish And Remove Spillway Including Concrete Weir and Apron: Reinforced Concrete Demo

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity includes demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Remove Spillway Gates

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway gates would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoist Rails/Platform

Price per ton was taken from the M&H estimate. Under the partial and full removal options, spillway hoist rails/platform would be removed during decommissioning and transported to an off-site disposal area.

Drain 1,702-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be

demolished and disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. This activity accounts for the sheet pile cutoff, in which all of the sheet pile wall as part of the core wall will be removed and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel Dredging

Cubic yard unit price and quantity was taken from the M&H estimate. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the AuSable River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove or Lay-Up Equipment: Disable Generating Capacity

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the generating capacity with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's

electromechanical equipment.

Remove or Lay-Up Equipment: Remove Electrical Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the electrical equipment with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 20% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 80% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the AuSable River, as well as both banks for all tributary lengths.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 950-foot-length is considered upstream of the revised water impounded area. For the full removal, a 1,050-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Fish Passage w/ Sea Lamprey Control

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 42-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot drop and 3-foot footer) and 4-foot width.

Installation of Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Construction Management and Biological Monitoring

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Owner's Cost

An owner’s cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $433,781 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.9 COST ESTIMATE RESULTS SUMMARY

The full conceptual decommissioning cost estimate for each dam site and scenario are provided in Appendices A through F. Tables 4.7 to Table 4.12 provide a summary of total cost by category for Mio, Alcona, Loud, Five Channels, Cooke, and Foote dams, respectively.

Table 4.7 Mio Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$142,000	$142,000
Decommissioning and Demolition	$286,719	$14,992,403	$19,978,887
Abatement and Regulated Material Removal	-	$13,642,734	$13,642,734
Salvage	-	$(42,763)	$(42,763)
Environmental and Restoration	$1,238,558	$27,759,776	$31,745,354
Subtotal	**$1,525,277**	**$56,494,150**	**$65,466,212**
Project Indirect	$1,100,270	$9,339,540	$10,778,812
Contingency Cost	$152,528	$5,649,415	$6,546,622
Total Project Cost	**$2,778,075**	**$71,483,105**	**$82,791,646**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

Table 4.8 Alcona Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$142,000	$142,000
Decommissioning and Demolition	$253,867	$9,729,946	$15,297,551
Abatement and Regulated Material Removal	-	$20,763,373	$20,763,373
Salvage	-	$(36,499)	$(36,499)
Environmental and Restoration	$2,117,712	$25,921,951	$29,505,029
Subtotal	**$2,371,579**	**$56,520,771**	**$65,671,454**
Project Indirect	$1,398,871	$7,966,166	$9,442,054
Contingency Cost	$237,158	$5,652,078	$6,567,146
Total Project Cost	**$4,007,608**	**$70,139,015**	**$81,680,654**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

Table 4.9 Loud Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$71,000	$71,000
Decommissioning and Demolition	$393,163	$10,384,515	$12,772,008
Abatement and Regulated Material Removal	-	-	-
Salvage	-	$(42,166)	$(42,166)
Environmental and Restoration	$1,538,558	$21,404,513	$23,271,999
Subtotal	**$1,931,721**	**$31,817,862**	**$36,072,841**
Project Indirect	$1,180,832	$6,922,664	$7,394,934
Contingency Cost	$193,173	$3,181,787	$3,607,285
Total Project Cost	**$3,305,726**	**$41,922,313**	**$47,075,060**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

Table 4.10 Five Channels Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$71,000	$71,000
Decommissioning and Demolition	$563,429	$12,588,340	$13,861,755
Abatement and Regulated Material Removal	-	-	-
Salvage	-	$(39,230)	$(39,230)
Environmental and Restoration	$1,850,000	$17,281,585	$16,441,505
Subtotal	**$2,413,429**	**$29,901,695**	**$30,335,030**
Project Indirect	$1,206,882	$6,529,849	$6,218,683
Contingency Cost	$241,343	$2,990,170	$3,033,503
Total Project Cost	**$3,861,654**	**$39,421,714**	**$39,587,216**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

Table 4.11 Cooke Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$71,000	$71,000
Decommissioning and Demolition	$524,217	$23,472,847	$25,911,123
Abatement and Regulated Material Removal	-	-	-
Salvage	-	$(45,075)	$(45,075)
Environmental and Restoration	$1,900,000	$48,503,091	$52,499,788
Subtotal	**$2,424,217**	**$72,001,863**	**$78,436,836**
Project Indirect	$1,323,270	$15,903,369	$16,822,538
Contingency Cost	$242,422	$7,200,187	$7,843,684
Total Project Cost	**$3,989,909**	**$95,105,419**	**$103,103,058**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

Table 4.12 Foote Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$4,260	$4,260
Decommissioning and Demolition	$307,852	$27,903,836	$30,502,763
Abatement and Regulated Material Removal	-	-	-
Salvage	-	$(62,930)	$(62,930)
Environmental and Restoration	$2,488,558	$60,641,226	$62,657,008
Subtotal	**$2,796,410**	**$88,486,392**	**$93,101,101**
Project Indirect	$1,635,759	$18,539,711	$19,085,728
Contingency Cost	$279,641	$8,848,640	$9,310,111
Total Project Cost	**$4,711,810**	**$115,874,743**	**$121,496,940**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

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APPENDIX

A MIO DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 MIO DAM SITE SUMMARY

Site Characteristics

- Two, 40-foot-high earth embankment dam sections, each with a concrete core wall.
- A 17-foot-high concrete spillway with one, 12.7-foot-high steel radial gate and a concrete-lined discharge channel extending approximately 220 feet downstream with a 6.5-foot-high concrete weir located approximately 45 feet downstream.
- A 530-foot-long auxiliary spillway located at the end of the south embankment dam.
- A reservoir with a normal surface area of 661 acres at elevation 962.6 feet (USGS datum) and a gross storage of 6,061 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 3,885 kW. The powerhouse also contains two spill tubes used primarily as the service spillway. Only one spill tube is operational at this time.
- A 185-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Known areas of groundwater contamination (PFAS) upstream of Mio and Upstream Air Force base is a Superfund site.
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing.
- Historic Properties Management Plan (HPMP) – Historic Operators Homesite
- Water Quality out of compliance; MDNR Management Plan calls for removal of the dam. Upwelling system in place without success.
- Wild & Scenic River downstream to Alcona – popular paddling/float trip water trail (Blue water trail recreation)
- Recreation is important resource to region (fishing, paddling, campgrounds, etc.)
    - Camp 10 Boat Launch, Canoe portage at dam, Joseph Pillars Park, MDNR Mio Dam State Forest Campground, MDNR Mio Pond Access, Tailwater access, Scenic Overlook, Oscoda County Park, Rainbow Resort, Wayside Recreation Site, U.S. Forest Service.
- MNDNR lists Mio as priority for removal (only one on Au Sable) due to warming in the reservoir and its detriment to the cold-water fishery (and wild and scenic river designation to Alcona).

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage
- Land/Shoreline Management
- HPMP
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Formalization to run of river mode
- Fish passage requirements
- Temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Mio Hydroelectric Dam 2021 Powerhouse Condition Assessment Results," the powerhouse was given a rating of 'Green', indicating that no major repairs will be needed for another 10 to 20 years. It was recommended that steel support columns in the powerhouse are cleaned and recoated. It was also recommended cracks observed throughout the exterior and interior of the powerhouse are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between May and June 2018 and consisted of the concrete features/structures (Auxiliary Spillway, Downstream Left Embankment Retaining Wall- Segment 1, Downstream Left Embankment Retaining Wall- Segment 2, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Spillway Abutment, Spillway Gate Piers and Concrete, Spillway/Powerhouse Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Apron, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall) and spillway structural walkway. The findings are summarized in a report dated January 4, 2019. Based on this report, the training wall was rated as 'YELLOW' (3 to 5 years before major repairs or replacement is necessary). Three site features were rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary): segment 2 of the left embankment retaining wall, the downstream powerhouse piers, and the log chute. In addition, cleaning of the cracks and sealing the leaks at the base of the downstream slope of the auxiliary spillway was recommended. Golder recommended that the cause and extent of the horizontal cracks at the base of the powerhouse spanning the downstream powerhouse piers be investigated further to develop appropriate repairs, as well as monitoring of the joint between the left wing-wall and pier to confirm that no movement is taking place. Golder also recommended that further study be completed to assess whether the seepage noted during the dive inspection is leading to piping of the soils below and around the dam and the extent to which pore water pressures are generating uplift forces that pose a risk to the dam. Other structures that were assessed in this report were generally found to be in good condition and given a 'GREEN' rating.

An Auxiliary Spillway Assessment Report prepared by BARR (dated November 2017) includes the observations of a non-destructive visual inspection and summarizes the review of design data for the auxiliary spillway. The report also includes the results of the Potential Failure Modes Analysis (PFMA) focused on the auxiliary spillway. The auxiliary spillway was observed to be in good condition. There were localized areas of missing joint sealant and random tight cracking in the stilling basin apron slab and sloped baffle wall section slab. The ongoing inspections should continue to look for cracking, spalling, leakage, joint offsets, and missing joint sealant. The data review included review of the original design computations, soil boring logs in the area of the auxiliary spillway, related FERC correspondence, and construction drawings. The design was found adequate for the design assumptions used at the time of the original 1988 design. The 1988 design and 2009 repairs also appear adequate for the auxiliary spillway to safely pass the current Probable Maximum Flood (PMF) which is less than the PMF at the time of the original auxiliary spillway and repair design. As a result of the focused PFMA, no new monitoring methods or significant risk reduction measures were identified. The focused PFMA highlighted the following maintenance, surveillance, and risk reduction measures related to the auxiliary spillway.

DIVE INSPECTIONS

- June 22, 2021, Spillway Leak Inspection
    - An upstream dive inspection was conducted to assist CEC in identifying the source of the heavy flow through the tumble bay weep holes. Only a slight dye color was detected downstream during the dive inspection which occurred when placing the dye at the upstream end of the left cofferdam concrete seal.
- June 13 and 14, 2018 Part 12 Inspection
    - Upstream
        - Left wing wall and Unit 1 left pier wall exhibited spalling and up to 6 inches of separation between the two walls.
        - Cracking was found on the right powerhouse Unit 1 wall.
        - No significant findings were noted on the powerhouse Unit 2 walls, the right abutment wall, and log chute walls.
        - Right wing wall exhibited spalling, voids in the concrete, exposed rebar, and separation at the interface with the core wall.
        - Spalling and cracking exhibited on the concrete wall spanning between the right abutment wall and the Unit 2 pier wall.
    - Downstream
        - Right embankment retaining wall/spillway abutment wall exhibited spalling and a deteriorated joint at the interface with the weir which had cold water flowing through it.
        - Spalling was noted in the tumble bay.
        - Concrete damage in the freeze/thaw zone was noted on the weir. Exposed rebar and spalling were also exhibited at the weir/downstream apron interface.
        - Spillway apron exhibited spalling and broken concrete.
        - Training wall exhibited spalling with exposed wire mesh.
        - Left embankment retaining wall exhibited spalling and cracking with cold water flowing through.
        - No significant findings were noted on the Units 1 and 2 draft tubes and walls, with the exception of a hole in the concrete in the Unit 1 draft tube.
        - Tailrace apron exhibited spalling and open joints with cold water flowing through.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a “performance-focused” inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a “deep dive”

into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Unit 1 Wicket Gate Refurbishment – Capital
- Unit 2 Wicket Gate Refurbishment – Capital
- Electrical Safety Project – Capital
- Training Wall Replacement – Capital

Remediation Projects not in LTFP

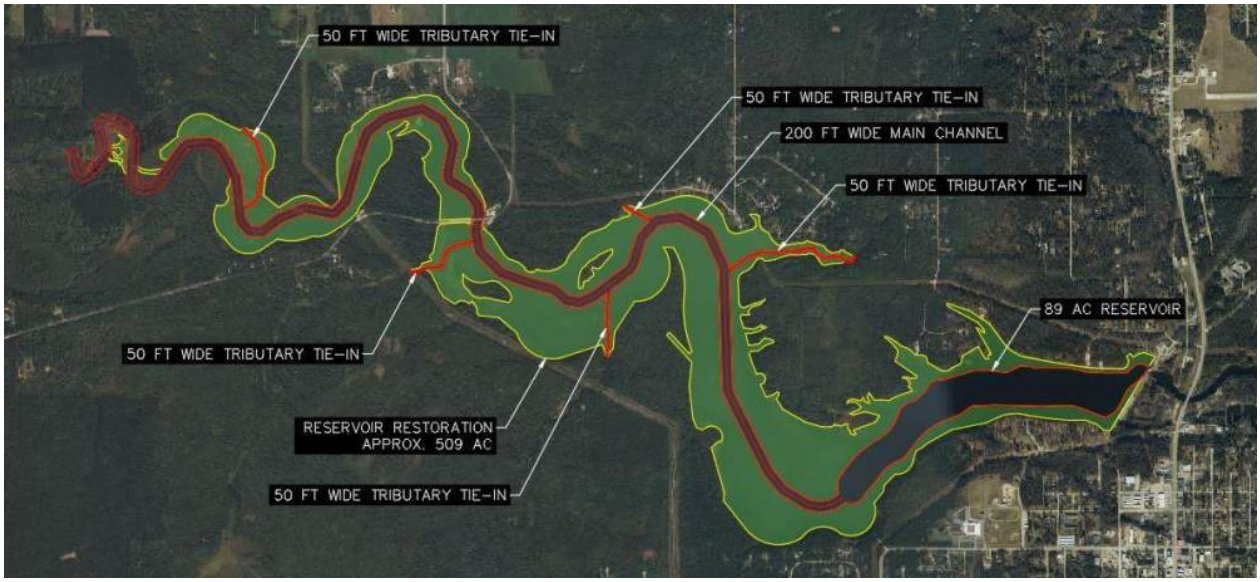
- Tumble Bay Leakage Through Concrete Beneath Spill Gates
- Powerhouse Armpit Leaks
- SF6 Breaker Maintenance
- Concrete Apron Joint Sealing Redo

Generation

The Mio development consists of 2 units with a calculated maximum generation capacity of 43,450 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 15,423 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 22,690 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

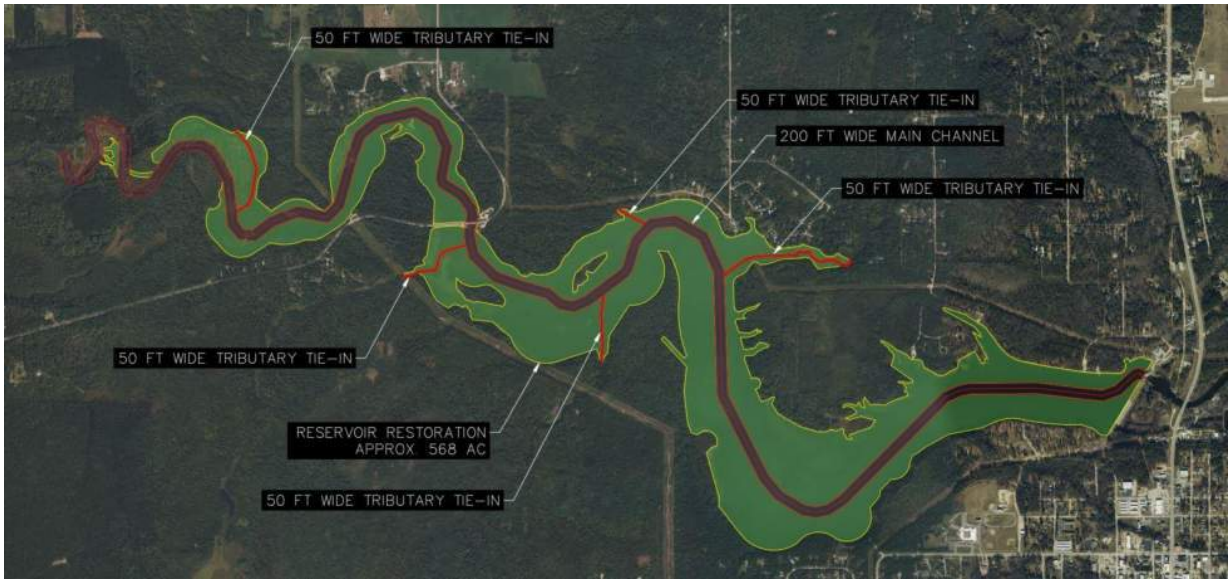
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
  - May also still cause sediment transport issues. Mio Dam should be removed before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Camp 10 Road Bridge partially blocking flow and causing upstream sedimentation may need to be replaced or have a widened underpass.

- Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
- Public disapproval of this option due to its socioeconomic and recreational impact.
    - The Mio Dam also received a State Historic Marker in 2005, which may create additional resistance to the dam removal.
- Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
    - No inhabited residential properties along riverbanks immediately downstream of dam
    - Pedestrian fishing pier approximately 550 FT downstream of dam along left bank
    - RT 33/Morenci Ave Bridge approximately 800 FT downstream of dam
    - Mio Au Sable River Launch approximately 1,350 FT downstream of dam along right bank (start of Wolf Creek pedestrian Trail along right bank)
    - Fed Trail 4367 Canoe Landing along left bank approximately 9,100 FT downstream of dam (start of Fed Trail along left bank).

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
        - Habitat can be restored along the entire footprint of the dam.
    - Eliminates issues of water quality (temperature and DO).
    - Eliminates sediment transport issues (if flow passage through Camp 10 Road Bridge is improved).
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Mio Dam should be removed before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Depending on the distribution of such contamination within the reservoir, this may be a significant cost burden.
    - Camp 10 Road Bridge/Boat Launch rebuild or under passage widening may add significant additional cost burden.

A-2 MIO DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Mio Dam
Decommissioning Cost Evaluation - Non-Power Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Leave Powerhouse Intact	LS	$198,161.00	1	$ 198,161.00
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943.00	1	$ 64,943.00
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615.00	1	$ 23,615.00
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000.00	23	$ 1,150,000.00
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558.00
					$ 1,525,277.00
Project Indirect	Owner's Cost				$ 228,792.00
	Engineering and Permitting				$ 718,950.00
	Construction Management				$ 152,528.00
Contingency	Contingency				$ 152,528.00
Total Project Costs					**$ 2,778,075.00**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

A-3 MIO DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Mio Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	1000	$ 71,000
	Move distribution lines from plant bus	LF	$ 71.00	1000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	3320	$ 7,836
	Remove plant access road	STA	$ 590.00	12	$ 7,080
	Remove storage building	LS	$ 10,000.00	1	$ 10,000
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Survey site for env. contamination	LS	$ -	1	$ -
	Removal of right downstream fishing pier: Reinforced concrete demolition	CY	$ 207.00	50	$ 10,350
	Removal of right downstream fishing pier: Sheet piling removal	SF	$ 2.36	2275	$ 5,369
	Remove piezometers	EACH	$ 2,362.00	26	$ 61,412
	Remove turbines	Tons	$ 265.00	549	$ 145,485
	Remove generators	Tons	$ 265.00	147	$ 38,955
	Remove cranes	Tons	$ 265.00	18	$ 4,770
	Remove trash rack rake system	Tons	$ 265.00	12	$ 3,180
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12000	$ 2,484,000
	Remove trash racks	Tons	$ 248.00	10	$ 2,480
	Remove valves	Tons	$ 248.00	4	$ 992
	Remove trash rack platforms	Tons	$ 248.00	1	$ 248
	Remove gates	Tons	$ 248.00	31	$ 7,688
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	6515	$ 1,348,605
	Remove Spillway gates	Tons	$ 248.00	7	$ 1,736
	Remove hoist rail	Tons	$ 248.00	3	$ 744
	Remove Spillway hoists	Tons	$ 248.00	5	$ 1,240
	Drain 661-acre reservoir	LS	$ 673,210.00	1	$ 673,210
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	138667	$ 983,150
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	1250890	$ 8,868,811
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	6500	$ 95,160
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	129	$ 26,703
	Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	SF	$ 2.36	2985	$ 7,046
Abatement & Regulated Material Removal	Contaminated Sediments - Removal	CY	$ 7.09	106641	$ 756,088
	Contaminated Sediments - Disposal	Tons	$ 70.00	184095	$ 12,886,646
Salvage	Salvage Value	LS	$ (42,763.00)	1	$ (42,763)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	509	$ 1,577,900
	Plant former reservoir bottom	AC	$ 3,072.00	509	$ 1,563,648
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	16000	$ 80,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	13576	$ 4,525,289
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	55264	$ 3,002,494
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	1257101	$ 10,056,811
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	509	$ 3,410,300
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	8889	$ 1,333,334
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Subtotal				**$ 56,494,150**
Project Indirect	Owner's Cost				$ 6,541,126
	Engineering and Permitting				$ 1,926,263
	Construction Management & Biological Monitoring				$ 872,151
Contingency	Contingency				$ 5,649,415
Total Project Costs					**$ 71,483,105**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

A-4 MIO DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Mio Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
	Move distribution lines from plant bus	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	3,320	$ 7,836
	Remove plant access road	STA	$ 590.00	12	$ 7,080
	Remove storage building	LS	$ 10,000.00	1	$ 10,000
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Survey site for env. contamination	LS	$ -	1	$ -
	Removal of right downstream fishing pier: Reinforced concrete demolition	CY	$ 207.00	50	$ 10,350
	Removal of right downstream fishing pier: Sheet piling removal	SF	$ 2.36	2,275	$ 5,369
	Remove piezometers	EACH	$ 2,362.00	26	$ 61,412
	Remove turbines	Tons	$ 265.00	549	$ 145,485
	Remove generators	Tons	$ 265.00	147	$ 38,955
	Remove cranes	Tons	$ 265.00	18	$ 4,770
	Remove trash rack rake system	Tons	$ 265.00	12	$ 3,180
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12,000	$ 2,484,000
	Remove trash racks	Tons	$ 248.00	10	$ 2,480
	Remove valves	Tons	$ 248.00	4	$ 992
	Remove trash rack platforms	Tons	$ 248.00	1	$ 248
	Remove gates	Tons	$ 248.00	31	$ 7,688
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	6,515	$ 1,348,605
	Remove Spillway gates	Tons	$ 248.00	7	$ 1,736
	Remove hoist rail	Tons	$ 248.00	3	$ 744
	Remove Spillway hoists	Tons	$ 248.00	5	$ 1,240
	Drain 661-acre reservoir	LS	$ 673,210.00	1	$ 673,210
	Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	CY	$ 14.64	151,000	$ 2,210,640
	Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	3,000	$ 621,000
	Demolish/remove entire earth dam, core wall, and emergency spillway: Sheet piling removal	SF	$ 2.36	69,425	$ 163,843
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	138,667	$ 983,150
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	1,549,890	$ 10,988,721
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
Abatement & Regulated Material	Contaminated Sediments - Removal	CY	$ 7.09	106,641	$ 756,088
	Contaminated Sediments - Disposal	Tons	$ 70.00	184,095	$ 12,886,646
Salvage	Salvage Value	LS	$ (42,763.00)	1	$ (42,763)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	568	$ 1,760,800
	Plant former reservoir bottom	AC	$ 3,072.00	568	$ 1,744,896
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	16,000	$ 80,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	16,172	$ 5,390,613
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	64,688	$ 3,514,500
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	1,670,701	$ 13,365,611
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	568	$ 3,805,600
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	8,889	$ 1,333,334
	Subtotal				**$ 65,466,212**
Project Indirect	Owner's Cost				$ 7,886,935
	Engineering and Permitting				$ 1,840,285
	Construction Management & Biological Monitoring				$ 1,051,592
Contingency	Contingency				$ 6,546,622
Total Project Costs					**$ 82,791,646**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

B ALCONA DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

B-1 ALCONA DAM SITE SUMMARY

Site Characteristics

- Two, 60-feet-high earth embankment dam sections, each with a concrete core wall
- A 250-feet-long emergency spillway located at the end of the east embankment
- A reservoir with a normal surface area of 1,006 acres at elevation 829.0 feet (USGS datum) and a gross storage of 12,547 acre-feet
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 7,905 kW
- A 135-foot-long concrete tailrace with retaining walls
- Associated appurtenant structures
- Recreation Facilities consist of Alcona Park, East & West Tailwater and canoe portage, and USFS Hwy 4001 Canoe Landing



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- No residential development around reservoir so the number of private landowner/stakeholders in licensing will be less than other sites
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4() measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing.
- Recreation is important resource to region (Popular with canoe trips, camping, county park)
- Water quality out of compliance; MDNR Management Plan calls for removal of the dam
- Significant wild rice population (Tribal interest)
- Historic Properties Management Plan (HPMP) – three original operator structures

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- HPMP
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements or mitigations
- Temperature and potentially dissolved oxygen (DO) exceedances or mitigations will be required
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements
- Ongoing maintenance of ageing equipment

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Alcona Hydroelectric Dam 2021 Powerhouse Condition Assessment Results,” the powerhouse was given a rating of 'Green',

indicating that no major repairs will be needed for another 10 to 20 years. Although no immediate major repairs are required, it was recommended that several features of the structures are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder Associates Inc. (Golder) on September 27 and 28, 2018 and consisted of the above-water concrete features/structures consisting of Downstream Powerhouse Pier, Abutments, and Walkway, Intake Deck Upstream Support Wall, Left Embankment Retaining Wall, Right Embankment Retaining Wall, Upper Left Embankment Retaining Wall, Upstream Powerhouse Piers. The findings are summarized in a report dated May 14, 2019. Based on this report, the intake deck upstream support wall was rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary). The other structures that were inspected during this condition assessment were rated 'GREEN'. The concrete feature ratings were based on above-water observations only. It was recommended to perform an underwater investigation of each feature and to adjust the ratings and remaining life estimates accordingly.

DIVE INSPECTIONS

- October 6, 2022, Unit #2 draft tube/east tailrace/downstream water boils Inspection
    - Bottom of upstream and downstream east retaining walls separated 30 inches – separation filled with stone/concrete blocks with water coming through.
    - Boils observed within 2 vertical construction joints along east retaining wall – 2 boils within each joint.
    - 2 concrete spalls observed in draft tube ceiling.
    - 3 concrete spalls along east apron slab with rebar visible.
    - 3 cracked out pieces of concrete observed along east apron with rebar visible.
    - Concrete spall observed on baffle wall weir.
    - East apron slab separated from baffle wall at several locations. Construction joint in east baffle wall is misaligned by 8 inches between east and west portions.
    - Apron slab downstreams of baffle wall spalled with rebar exposed.
    - 4 water boils are present downstream of the apron slabs.
- October 5, 2022, Unit #1 draft tube/west tailrace
    - 2 concrete spalls observed in draft tube bay for unit #1.
    - Separation of 3 vertical construction joints along west retaining wall with water boils.
    - 4 concrete spalls observed along west retaining wall.
    - 7 diagonal cracks observed along west retaining wall, with several water boils in cracks.
    - 6 concrete spalls observed along west concrete apron slabs .
    - Several apron slab horizontal joints are misaligned/offset, including joint between apron slabs and baffle wall.
    - 8 cracks present along west apron slab.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Due the on-going RIDM process for this project, FERC did not require a formal Part 12 IC inspection and report for 2021. However, an Informal Part 12 inspection was performed. The informal report was limited to a field inspection and a general review of the project data. Recommendations in the informal report cover only site condition issues and are relatively minor. The report did review recommendations from the previous Part 12 report. There is an outstanding recommendation that the existing stability analyses for the embankment and structures should be updated utilizing the current PMF. If this work has not been completed and there is no confirmation that the assets meet current required safety factors, it could lead to recommendations for remediation/upgrades to the project.

Current Remediation Projects in LTFP

- Powerhouse Window Replacement - Capital
- Core Wall Remediation - Capital
- Intake Deck Upstream Support Wall - Capital
- Risk Informed Decision Making - Capital
- Trash Rack Ergonomics - Capital
- Electrical Safety Project - Capital
- Unit 1 Bearings & TGB Sleeve & Wicket Gates - Capital
- Relief Well Installation - Capital
- Units 1 & 2 Governor Replacement - Capital
- Artesian Design Study - Capital
- Units 1 & 2 Head Gate Replacement - Capital
- Left Driveway Retaining Wall Repairs - O&M
- Unit 1 Concrete Repairs (In Spiral Case) - O&M

Remediation Projects not in LTFP

- Head Gate Hoists – Capital

- Unit 2 Bearings & TGB Sleeve & Wicket Gates - Capital
- Unit 2 Overhaul (double acting Kaplan units)

FERC Required Spillway Projects (in LTFP)

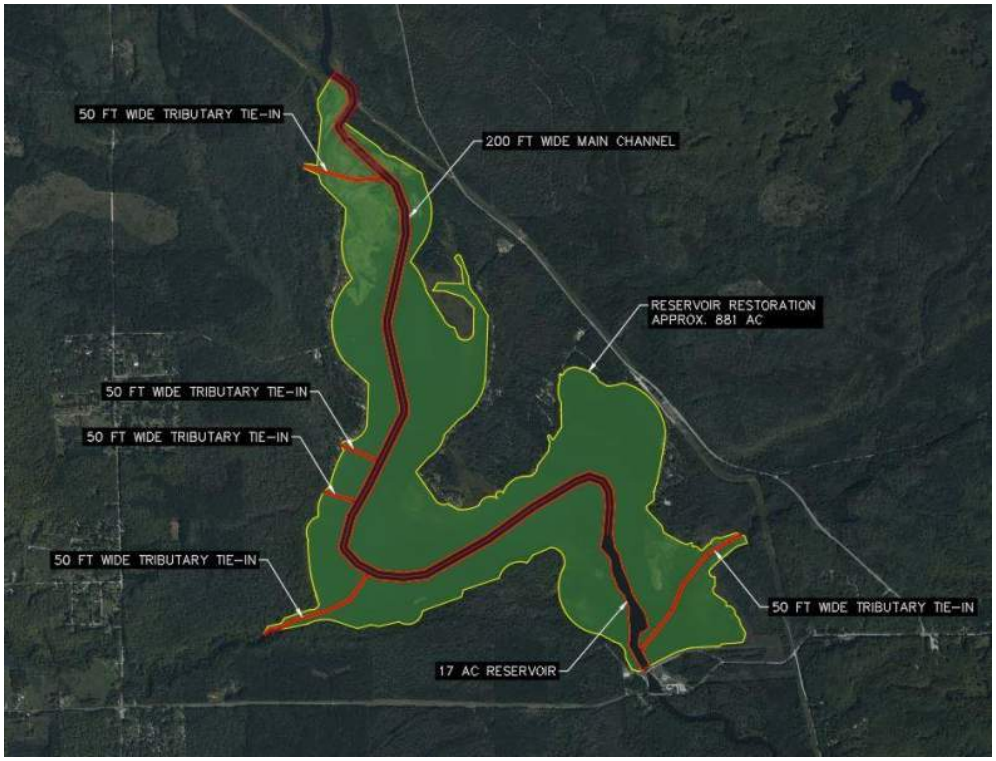
- RIDM Resolution (Auxiliary Spillway/Embankment Modifications/etc.) -Capital
    - The Alcona Risk Informed Decision Making Project identified the risk for auxiliary spillway erosion and subsequent failure exceeded the FERC tolerable risk guidelines. CEC plans to safely convey discharge from the auxiliary spillway across Bamfield Road and toward the forested area to the south by:
        - Installing scour protection along parts of the left non-core wall embankment upstream slope
        - Regrading about 360 feet of the left non-core wall embankment into a cone-shaped transition
        - Constructing a flow-guiding berm to Bamfield Road
        - Re-grading the auxiliary spillway channel to direct water toward the centerline of the spillway
        - Regrading Bamfield Road and constructing a scour-resistant cross to direct discharge across the road toward the Au Sable River

Generation

The Alcona development consists of 2 units with a calculated maximum generation capacity of 70,080 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 29,025 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 56,599 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

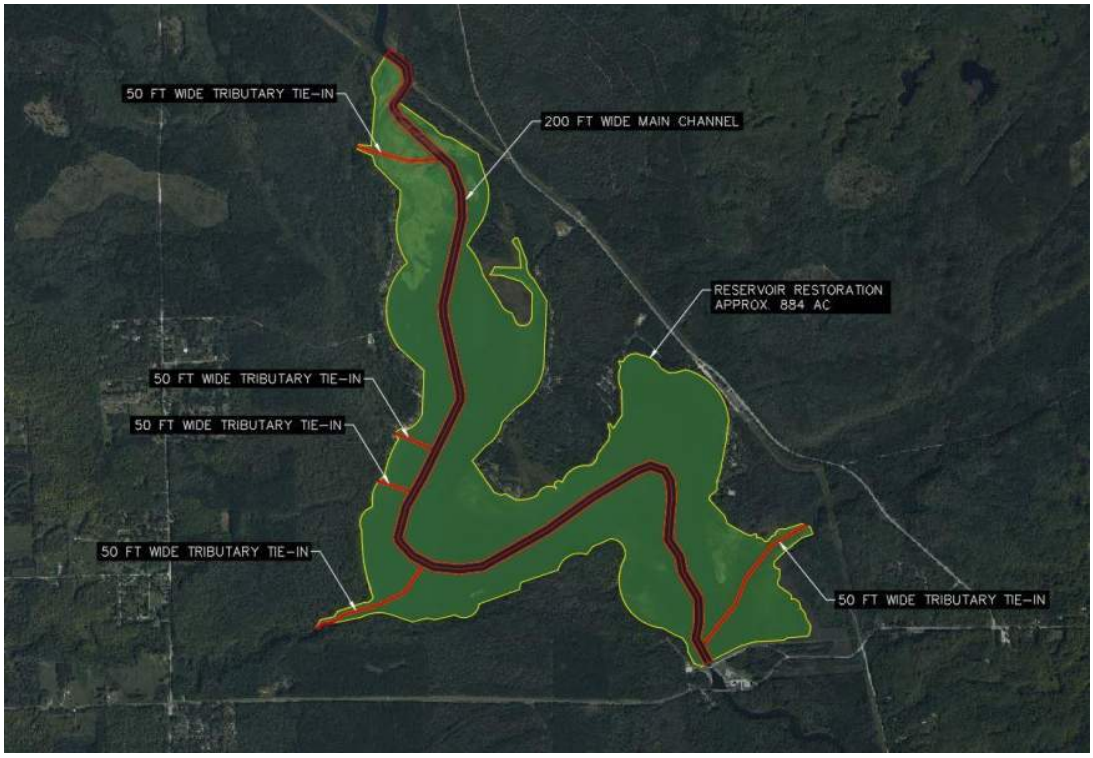
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.

- Cons/Risks
    - Emergency spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405.
    - May also still cause sediment transport issues. Alcona Dam should be removed after the removal of the Mio Dam and before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir limits.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
        - 3 inhabited residential properties are located along right bank between 500 FT to 800 FT downstream of dam (along S Alcona Dam Road)
        - Bamfield Road Bridge is located approximately 500 FT downstream of dam
        - Bobcat Creek Park is located approximately 10,000 FT downstream of dam

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potential DO).
  - Eliminates sediment transport issues.

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Alcona Dam should be removed after the removal of the Mio Dam and before all other downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Potential for contaminated sediment removal and disposal due to the upstream PFAS groundwater contamination from the Camp Grayling Superfund site. Depending on the distribution of such contamination within the reservoir, this may be a significant cost burden.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine how to manage existing recreational features.

License Surrendering (Non-Power Operation)

- Pros
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved, but requires installation of fish passage system; discontinuation of MDNR stocking.

- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - The non-power operation of the Alcona Dam may cost more than either of the removal options due to repairs that are needed for the earth dam and core wall, the tailrace, upslope protection, and a possible extension needed for the right embankment according to the Kiewit cost evaluation. The Kiewit cost evaluation also considers a widening of the auxiliary spillway which includes a flow guiding berm and regrading of Bamfield Road.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405. Significant costs may be required bring the water temperature into compliance to support cold water fisheries.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

B-2 ALCONA DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Non power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Leave Powerhouse Intact	LS	$ 76,751	1	$ 76,751
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943	1	$ 64,943
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615	1	$ 23,615
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558	1	$ 88,558
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000	42	$ 2,100,000
	Spiral case enlargement	LS	$ 17,712	1	$ 17,712
	Subtotal				**$ 2,371,579**
Project Indirect	Owner's Cost				$ 355,737
	Construction Management				$ 237,158
	Engineering and Permitting				$ 805,976
Contingency	Contingency				$ 237,158
Total Project Costs	Total				**$ 4,007,608**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

B-3 ALCONA DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
	Move distribution lines from plant bus	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	8,840	$ 20,863
	Remove plant access road	STA	$ 590.00	60	$ 35,400
	Plug and abandon artesian wells	EACH	$ 500.00	24	$ 12,000
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	10	$ 23,620
	Remove turbines	Tons	$ 282.00	553	$ 155,946
	Remove generators	Tons	$ 282.00	216	$ 60,912
	Remove cranes	Tons	$ 282.00	27	$ 7,614
	Remove fixtures	Tons	$ 282.00	5	$ 1,410
	Remove hoists	Tons	$ 282.00	9	$ 2,538
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12,708	$ 2,630,556
	Remove trash racks	Tons	$ 265.00	10	$ 2,650
	Remove valves	Tons	$ 265.00	8	$ 2,120
	Remove gates	Tons	$ 265.00	64	$ 16,960
	Drain 1006-acre reservoir	LS	$ 530,877.00	1	$ 530,877
	Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	CY	$ 7.09	140,488	$ 996,060
	Remove accumulated sediments (non-contaminated): Reservoir dredging	CY	$ 7.09	566,938	$ 4,019,591
	Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	LS	$ 118,077.00	2	$ 236,154
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	53,700	$ 786,168
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	454	$ 94,063
	Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	SF	$ 2.36	7,497	$ 17,693
Abatement & Regulated Material Removal	Contaminated Sediments - Removal	CY	$ 7.09	162,301	$ 1,150,717
	Contaminated Sediments - Disposal	Tons	$ 70.00	280,181	$ 19,612,656
Salvage	Salvage Value	LS	$ (36,499.00)	1	$ (36,499)
	Seed former reservoir bottom	AC	$ 3,100.00	881	$ 2,731,100
	Plant former reservoir bottom	AC	$ 3,072.00	881	$ 2,706,432
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	22,000	$ 110,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	8,430	$ 2,809,972
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	47,770	$ 2,595,345
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	690,383	$ 5,523,068
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	881	$ 5,902,700
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	8,889	$ 1,333,334
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Subtotal				**$ 56,520,771**
Project Indirect	Owner's Cost				$ 5,536,218
	Construction Management & Biological Monitoring				$ 738,163
	Engineering and Permitting				$ 1,691,785
Contingency	Contingency				$ 5,652,078
Total Project Costs	**Total**				**$ 70,139,015**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

B-4 ALCONA DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Alcona Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Utility separation	Move distribution lines from plant bus	LF	$ 71.00	1,000	$ 71,000
	Remove security fencing	LF	$ 2.36	8,840	$ 20,863
	Remove plant access road	STA	$ 590.00	60	$ 35,400
	Plug and abandon artesian wells	EACH	$ 500.00	24	$ 12,000
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	10	$ 23,620
	Remove turbines	Tons	$ 282.00	553	$ 155,946
	Remove generators	Tons	$ 282.00	216	$ 60,912
	Remove cranes	Tons	$ 282.00	27	$ 7,614
	Remove fixtures	Tons	$ 282.00	5	$ 1,410
	Remove hoists	Tons	$ 282.00	9	$ 2,538
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12,708	$ 2,630,556
	Remove trash racks	Tons	$ 265.00	10	$ 2,650
	Remove valves	Tons	$ 265.00	8	$ 2,120
	Remove gates	Tons	$ 265.00	64	$ 16,960
	Drain 1006-acre reservoir	LS	$ 530,877.00	1	$ 530,877
	Demolish/remove entire earth dam, core wall and emergency spillway: Excavation	CY	$ 14.64	352,000	$ 5,153,280
	Demolish/remove entire earth dam, core wall and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	2,970	$ 614,790
	Demolish/remove entire earth dam, core wall and emergency spillway: Sheet piling removal	SF	$ 2.36	49,000	$ 115,640
	Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	CY	$ 7.09	140,488	$ 996,060
Decommissioning and Demolition	Remove accumulated sediments (non-contaminated): Reservoir dredging	CY	$ 7.09	649,000	$ 4,601,410
	Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	LS	$ 118,077.00	2	$ 236,154
Abatement & Regulated Material Removal	Contaminated Sediments - Removal	CY	$ 7.09	162,301	$ 1,150,717
	Contaminated Sediments - Disposal	Tons	$ 70.00	280,181	$ 19,612,656
Salvage	Salvage Value	LS	$ (36,499.00)	1	$ (36,499)
	Seed former reservoir bottom	AC	$ 3,100.00	884	$ 2,740,400
	Plant former reservoir bottom	AC	$ 3,072.00	884	$ 2,715,648
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	22,000	$ 110,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	9,339	$ 3,112,969
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	52,921	$ 2,875,198
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	1,062,539	$ 8,500,314
Environmental and Restoration	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	884	$ 5,922,800
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	18,518	$ 2,777,700
	Subtotal				**$ 65,671,454**
	Owner's Cost				$ 6,908,820
Project Indirect	Construction Management & Biological Monitoring				$ 921,176
	Engineering and Permitting				$ 1,612,058
Contingency	Contingency				$ 6,567,146
Total Project Costs	**Total**				**$ 81,680,654**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

C LOUD DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

C-1 LOUD DAM SITE SUMMARY

Site Characteristics

- Two, 42-foot-high earth embankment dam sections, each with a concrete core wall.
- A 20-foot-high concrete spillway with three, 15.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 6.5-feet-high concrete weir located approximately 45 feet downstream.
- A 100-feet-long emergency spillway.
- A reservoir with a normal surface area of 743 acres at elevation 742.6 feet (USGS datum) and a gross storage of 6,987 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 4,000 kW.
- A 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 125 feet downstream.
- Associated appurtenant structures.
- Peaking plant operations (only on Au Sable)
- Significant amount of surrounding lands owned by USFS and Consumers; no development.
- Operationally linked with Five Channels Dam



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Peaking plant reregulated by Five Channels Dam downstream
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4(e) measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing. Sedimentation of upper end of reservoir
- Operators homes listed on National Register of Historic Places (NRHP)
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Westgate, which is a popular overlook on M-65. The Iron Belle Trail/Iosco Exploration Trail will be using CE property near Westgate

Future License Conditions

- Operations monitoring/automation
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan (HPMP)
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Loss of peaking operations
- Fish passage requirements
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Loud Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The interior and exterior of the powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. Although no immediate major repairs are required, additional maintenance and monitoring will be required in several areas to prevent the need for future repairs. Additionally, it is recommended to repair the spalling with exposed rusting reinforcing steel above Unit 1 to prevent further deterioration.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and July 2018 and consisted of the concrete features/structures (excluding the powerhouse) and spillway structural walkway. The findings were summarized in a condition assessment report for Loud Hydroelectric Dam dated January 4, 2019.

The key findings from the Loud Dam condition assessment identified two site features (embankment core wall section - above water, and training wall) that were rated as ORANGE (1 to 3 years before major repairs or replacement is necessary). One site feature (segment 2 of the downstream left embankment retaining wall) was rated as YELLOW (3 to 5 years before major repairs or replacement is necessary). In addition, periodic maintenance including cleaning and re-sealing of the joints is recommended for segment 1 of the downstream left embankment wall, log chute, and upstream spillway piers as soon as practicable. Golder recommends removing the vegetation overgrowth on the emergency spillway concrete sloping wall so that the remainder of the wall can be properly inspected. Golder also recommended refinishing the areas with protective coating loss on the spillway structural walkway to ensure corrosion does not reduce the design life of the structure. The underwater inspection of the right wing wall observed a 0.5-inch separation of the joint between the abutment and wing wall. Continued monitoring of the wing wall to abutment joint during routine dive inspections is recommended to confirm there is not future movement of the wall. Other structures that were inspected during this condition assessment and are included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- Downstream Spillway, May 18, 2021:
    - 3 Diagonal cracks, 2 horizontal cracks, 2 vertical cracks, 4 concrete spalls, and 2 open vertical construction joints at north retaining wall.
    - 2 vertical cracks, 1 horizontal crack, 2 diagonal cracks, and 2 open vertical construction joints at divider pier between the spillway and powerhouse.
    - The downstream scour apron was separated from the divider wall at several locations by up to 8 inches. Several concrete spalls up to 5 inches deep were observed in the apron.
- Upstream Powerhouse & Spillway, May 19, 2021:
    - Lifting chains and connectors in the upstream spillway were deteriorated by up to 10%.
    - One horizontal crack was observed at the north retaining wall along the upstream spillway. One concrete spall was observed at the construction joint between the wing wall and the North retaining wall.

- Trash rack bars are deteriorated up to 10% throughout. Trash racks in Bay #3 are completely blocked with Zebra mussels. Bay 3 is a dead bay with not generating unit installed.
- One concrete spall at the pier between Bay #s 2 and 3.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement. The exception to this is the potential for repair of the core wall based on the results of the evaluation of survey data for ongoing movements, the repair of the left spillway retaining wall and the review of whether the emergency spillway is needed to pass the PMF.

Current Remediation Projects in LTFP

- Units 1 and 2 Governor Replacement – Capital
- Remote Spillgate Controls Installation – Capital
- Spillway Hoist Replacement – Capital
- Unit 1 Wicket Gate Replacement – Capital
- Unit 2 Wicket Gate Replacement – Capital
- Left Embankment Seepage Cutoff – Capital
- Electrical Safety Project – Capital
- Transformer Replacement – Capital
- Left Embankment Retaining Wall Replacement – Capital
- Unit 1 Generator Rewind – Capital
- Powerhouse Window Replacement – Capital
- Intake Deck Remediation – O&M

Remediation Projects not in LTFP

- Grass Lined Emergency Spillway Modification
- Units 1, 2, and 3 Headgate Replacement or Remediation
- Units 1 and 2 Concrete Repairs

Generation

The Loud development consists of 2 units with a calculated maximum generation capacity of 35,040 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 18,689 MWH, contributing 4% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 23,588 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Loud Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.

- Cons/Risks
  - Emergency spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - May also still cause sediment transport issues. The Loud Dam should be removed after removal of all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
    - 3 residential homes along right bank approximately 1,100 FT to 1,500 FT downstream of dam

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
    - Eliminates sediment transport issues
    - It is unlikely that the Loud Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Loud Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Significant planning and analysis required to determine

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

C-2 LOUD DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Leave Powerhouse Intact	LS	$304,605.00	1	$ 304,605
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943.00	1	$ 64,943
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615.00	1	$ 23,615
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000.00	29	$ 1,450,000
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558
	Subtotal				**$ 1,931,721**
	Owner's Cost				$ 289,759
	Engineering and Permitting				$ 697,900
	Construction Management				$ 193,173
Contingency	Contingency				$ 193,173
Total					**$ 3,305,726**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

C-3 LOUD DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	4,780	$ 11,281
	Remove plant access road	STA	$ 590.00	17	$ 10,030
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	15	$ 35,430
	Remove turbines	Tons	$ 265.00	693	$ 183,645
	Remove generators	Tons	$ 265.00	73	$ 19,345
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove trash rack rake system	Tons	$ 265.00	5	$ 1,325
	Remove fixtures	Tons	$ 265.00	16	$ 4,240
	Remove hoists	Tons	$ 266.00	6	$ 1,596
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	10,437	$ 2,160,459
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	60	$ 15,900
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	9,900	$ 2,049,300
	Remove Spillway gates	Tons	$ 248.00	31	$ 7,688
	Remove Spillway hoists	Tons	$ 248.00	5	$ 1,240
	Drain 743-acre reservoir	LS	$ 807,294.00	1	$ 807,294
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	138,065	$ 978,881
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	513,023	$ 3,637,333
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	13,100	$ 191,784
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	304	$ 62,846
Salvage	Salvage Value	LS	$ (42,166.00)	1	$ (42,166)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	546	$ 1,692,600
	Plant former reservoir bottom	AC	$ 3,072.00	546	$ 1,677,312
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	16,000	$ 80,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	10,282	$ 3,427,300
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	41,128	$ 2,234,485
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	664,188	$ 5,313,504
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	546	$ 3,658,200
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	7,407	$ 1,111,112
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Subtotal				**$ 31,817,862**
Project Indirect	Owner's Cost				$ 4,772,680
	Engineering and Permitting				$ 1,513,626
	Construction Management & Biological Monitoring				$ 636,358
Contingency	Contingency				$ 3,181,787
Total					**$ 41,922,313.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

C-4 LOUD DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Loud Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	4,780	$ 11,281
	Remove plant access road	STA	$ 590.00	17	$ 10,030
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	15	$ 35,430
	Remove turbines	Tons	$ 265.00	693	$ 183,645
	Remove generators	Tons	$ 265.00	73	$ 19,345
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove trash rack rake system	Tons	$ 265.00	5	$ 1,325
	Remove fixtures	Tons	$ 265.00	16	$ 4,240
	Remove hoists	Tons	$ 266.00	6	$ 1,596
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	10,437	$ 2,160,459
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	60	$ 15,900
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	9,900	$ 2,049,300
	Remove Spillway gates	Tons	$ 248.00	31	$ 7,688
	Remove Spillway hoists	Tons	$ 248.00	5	$ 1,240
	Drain 743-acre reservoir	LS	$ 807,294.00	1	$ 807,294
	Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	CY	$ 14.93	99,135	$ 1,480,086
	Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	2,300	$ 476,100
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	138,065	$ 978,881
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	609,770	$ 4,323,270
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
Salvage	Salvage Value	LS	$ (42,166.00)	1	$ (42,166)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	583	$ 1,807,300
	Plant former reservoir bottom	AC	$ 3,072.00	583	$ 1,790,976
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	16,000	$ 80,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	12,078	$ 4,025,960
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	48,312	$ 2,624,791
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	846,970	$ 6,775,760
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	583	$ 3,906,100
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	10,074	$ 1,511,112
	Subtotal				**$ 36,072,841**
Project Indirect	Owner's Cost				$ 5,410,927
	Engineering and Permitting				$ 1,262,550
	Construction Management & Biological Monitoring				$ 721,457
Contingency	Contingency				$ 3,607,285
Total					**$47,075,060**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

D FIVE CHANNELS DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

D-1 FIVE CHANNELS DAM SITE SUMMARY

Site Characteristics

- Two, 45-feet-high earth embankment dam sections, each with a concrete core wall
- A 25-foot-high concrete spillway with three, 14.5-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 8-foot-high concrete weir located approximately 60 feet downstream
- A reservoir with a normal surface area of 212 acres at elevation 715.0 feet (USGS datum) and a gross storage of 3,419 acre-feet
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 5,966 kW
- A 35-foot-long concrete apron in the tailrace with concrete retaining walls extending approximately 120 feet downstream
- Associated appurtenant structures
- Peaking operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Peaking operations
- USFS is a significant property owner adjacent to the Project with public amenities. USFS has mandatory conditioning authority under the Federal Power Act (4() measures) which FERC must accept as part of their license Order which makes USFS important stakeholder during relicensing
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Most visible dam on the Au Sable River due to the bridge crossing for M-65 at the dam. The old M-65 bridge is owned by MDOT and is key bridge for snowmobilers to cross the river.
- Five Channels Dam "Workers Camp" is listed on National Register of Historic Places

Future License Conditions

- Operations monitoring/automation
- Water quality monitoring
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Loss of peaking operations
- Fish passage requirements
- Temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Five Channels Hydroelectric Dam 2021 Powerhouse Condition Assessment Results," the powerhouse was given a rating of 'Green', indicating that no major repairs will be needed for another 10 to 20 years. It was recommended that exposed reinforcing steel observed near one of the units be repaired to prevent further deterioration. It was also recommended that cracking and spalling observed throughout the exterior and interior of the powerhouse are monitored on a regular basis.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and August 2018 and consisted of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Apron, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall, Upstream Spillway Piers) and Spillway Structural Walkway. The training wall was rated as 'YELLOW' (3 to 5 years before major repairs or replacement is necessary). Another site feature, the log chute, was rated as 'BLUE' (5 to 10 years before major repairs or replacement is necessary). In addition, biennial dive inspections of the downstream powerhouse apron and right wing-wall are recommended for continued monitoring. Golder recommended refinishing of areas with loss of protective coating on the spillway structural walkway deck to ensure corrosion does not reduce the design life of the structure. It is also recommended to perform periodic maintenance including cleaning and sealing of the joints as soon as practicable. Other structures that were inspected during this condition assessment and are included in this report were generally found to be in good condition and given a 'GREEN' rating.

DIVE INSPECTIONS

- Upstream Spillway and Powerhouse, July 14, 2021:
    - Spall on concrete on right side of divider pier between spillway and powerhouse.
    - Spill bays 1 through 3 exhibited no defects however the cotter keys need replacing.
    - Open construction joint (up to 3 inches wide) with sediment coming through at the bottom at the intersection between right wing wall and retaining wall.
    - Upstream left wing wall and Bays 1 through 3 trash racks exhibited no defects.
    - Upstream left retaining wall exhibited vertical cracks, 2 concrete spalls, and a vertical open construction joint between the retaining wall and the wing wall.
    - Spall on right side of divider pier between powerhouse and spillway.
- Downstream Powerhouse and Spillway, July 15 and 19, 2021:
    - Spall on concrete on left tailrace retaining wall.
    - No defects exhibited in draft tube Bays 1 and 2 but a horizontal concrete spall was exhibited on the left side of the divider pier between Bays 2 and 3.
    - No defects exhibited in the log chute.

- An open construction joint was exhibited on the downstream divider pier between the powerhouse and spillway.
- Minor undermining of the powerhouse concrete apron slab was exhibited downstream of draft tube 2 however no concrete defects were noted.
- No defects were exhibited on the spillway downstream right retaining wall and weir wall.
- Cracks, spalls, and an open vertical construction joint were exhibited on the right side of the divider pier between the spillway and powerhouse.
- No significant defects were exhibited downstream of the spillway concrete scour apron however 1 spall was exhibited adjacent to a construction joint.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Remote Spillgate Controls Installation – Capital
- Unit 1 Wicket Gate Refurbishment – Capital
- Unit 2 Wicket Gate Refurbishment – Capital
- Dead Bay and Log Chute Replacement – Capital
- Headgate Replacement – Capital
- Spillway Hoist Replacement – Capital
- Training Wall Replacement – Capital
- Trash Rack Ergonomics Project - Capital
- Intake Deck Concrete Repairs – O&M
- Left Embankment Stability Study – O&M

Remediation Projects not in LTFP

- Study of Water Left of Powerhouse in Groin Area
- Study of Wall Left of Powerhouse
- Unit Upgrades
- Backside Upstream Side of Powerhouse Leaking (might be addressed with Dead Bay Project)
- Units 1 and 2 Concrete Repairs

Generation

The Five Channels development consists of 2 units with a calculated maximum generation capacity of 52,560 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 25,032 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 32,728 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Five Channels Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
  - It is anticipated that less dredging will be required within this reservoir due to it being located directly downstream of the Loud Dam where a large portion of upstream sediments have already settled out. The existing 212-acre reservoir more closely mimics a wide river than a true reservoir. Limited bathymetry is available but based on aerials it looks to preserve the natural channel within the reservoir.
  - Less intense planning and analysis required to determine how to manage existing recreational features since reservoir shoreline should not significantly recede. There are also very few recreational features along this reservoir shoreline.

- Cons/Risks
  - Features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - May also still cause sediment transport issues. The Five Channels Dam should be removed after removal of all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - Additional costs will be required to remove office buildings and warehouses adjacent to the dam. Contaminant surveys should be conducted for these buildings.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
        - Habitat can be restored along the entire footprint of the dam.
    - Eliminates sediment transport issues
    - It is unlikely that the Five Channels Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
    - It is anticipated that less dredging will be required within this reservoir due to it being located directly downstream of the Loud Dam where a large portion of upstream sediments have already settled out. The existing 212-acre reservoir more closely mimics a wide river than a true reservoir. Limited bathymetry is available but based on aerials it looks to preserve the natural channel within the reservoir.
    - Less intense planning and analysis required to determine how to manage existing recreational features since reservoir shoreline should not significantly recede. There are also very few recreational features along this reservoir shoreline.
- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Five Channels Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Additional costs will be required to remove office buildings and warehouses adjacent to the dam. Contaminant surveys should be conducted for these buildings.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden
  - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
  - Fish passage improved, but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Office buildings and warehouses adjacent to dam can remain in place.
- Cons/Risks
  - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - Future repairs to dam structure.
  - Fish passage installation required.
  - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

D-2 FIVE CHANNELS DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Five Channels Dam
Decommissioning Cost Evaluation - Non Power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Remove Office buildings/Warehouses	LS	$ 94,462.00	1	$ 94,462
	Leave Powerhouse Intact	LS	$291,851	1	$ 291,851
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943.00	1	$ 64,943
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615.00	1	$ 23,615
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000.00	37	$ 1,850,000
	Subtotal				**$ 2,413,429**
Project Indirect	Owner's Cost				$ 362,015
	Engineering and Permitting				$ 603,524
	Construction Management				$ 241,343
Contingency	Contingency				$ 241,343
Total					**$ 3,861,654**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

D-3 FIVE CHANNELS DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Five Channels Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,775	$ 4,189
	Remove Office buildings/Warehouses	LS	$ 94,462.00	1	$ 94,462
	Remove plant access road	STA	$ 590.00	7	$ 4,130
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	10	$ 23,620
	Remove turbines	Tons	$ 265.00	613	$ 162,445
	Remove generators	Tons	$ 265.00	100	$ 26,500
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove hoists	Tons	$ 265.00	12	$ 3,180
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	11,000	$ 2,277,000
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	61	$ 16,165
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	11,588	$ 2,398,716
	Remove hoist rail/platform	Tons	$ 265.00	7	$ 1,855
	Drain 212-acre reservoir	LS	$ 883,073.00	1	$ 883,073
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	137,872	$ 977,513
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	751,970	$ 5,331,468
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	10,910	$ 159,723
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	87	$ 18,078
Salvage	Salvage Value	LS	$ (39,230.00)	1	$ (39,230)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	167	$ 517,700
	Plant former reservoir bottom	AC	$ 3,072.00	167	$ 513,024
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	8,000	$ 40,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	6,716	$ 2,238,645
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	26,864	$ 1,459,522
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	900,752	$ 7,206,016
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	167	$ 1,118,900
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	13,185	$ 1,977,778
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
Subtotal					**$ 29,901,695**
Project Indirect	Owner's Cost				$ 4,485,255
	Engineering and Permitting				$ 1,446,560
	Construction Management & Biological Monitoring				$ 598,034
Contingency	Contingency				$ 2,990,170
Total					**$ 39,421,714**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

D-4 FIVE CHANNELS DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Five Channels Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,775	$ 4,189
	Remove Office buildings/Warehouses	LS	$ 94,462.00	1	$ 94,462
	Remove plant access road	STA	$ 590.00	7	$ 4,130
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	10	$ 23,620
	Remove turbines	Tons	$ 265.00	613	$ 162,445
	Remove generators	Tons	$ 265.00	100	$ 26,500
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove hoists	Tons	$ 265.00	12	$ 3,180
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	11,000	$ 2,277,000
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	61	$ 16,165
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	11,588	$ 2,398,716
	Remove Spillway gates	Tons	$ 265.00	30	$ 7,950
	Remove hoist rail/platform	Tons	$ 265.00	7	$ 1,855
	Remove spillway hoists	Tons	$ 265.00	8	$ 2,120
	Drain 212-acre reservoir	LS	$ 883,073.00	1	$ 883,073
	Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	CY	$ 14.64	88,400	$ 1,294,176
	Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	710	$ 146,970
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	137,872	$ 977,513
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	751,970	$ 5,331,468
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
Salvage	Salvage Value	LS	$ (39,230.00)	1	$ (39,230)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	167	$ 517,700
	Plant former reservoir bottom	AC	$ 3,072.00	167	$ 513,024
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	8,000	$ 40,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	6,716	$ 2,238,645
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	26,864	$ 1,459,522
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	978,242	$ 7,825,936
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	167	$ 1,118,900
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	13,185	$ 1,977,778
	Subtotal				**$ 30,335,030**
Project Indirect	Owner's Cost				$ 4,550,255
	Engineering and Permitting				$ 1,061,727
	Construction Management & Biological Monitoring				$ 606,701
Contingency	Contingency				$ 3,033,503
Total					**$ 39,587,216**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

E COOKE DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

E-1 COOKE DAM SITE SUMMARY

Site Characteristics

- Two, 50-feet-high earth embankment dam sections, each with a concrete core wall.
- A 25-foot-high concrete spillway with three, 15-foot-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with an 11.5-foot-high concrete weir located approximately 50 feet downstream.
- A reservoir with a normal surface area of 1,627 acres at elevation 678.5 feet (USGS datum) and a gross storage of 26,749 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 7,500 kW.
- An approximately 120-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures.
- Recreation Facilities consist of Iargo Springs, Canoer's Memorial, and Lumberman's Monument.
- Peaking Operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Cooke Dam listed on National Register of Historic Places (NRHP)
- Considerable Public Recreation use on Au Sable River
- Majority public lands (USFS) and limited private property adjacent to shoreline

Future License Conditions

- Operations monitoring/automation
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Cooke Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo,” The interior of the powerhouse structure was given a 'Green' rating, indicating that major repair will not be needed for about 10 to 20 years. However, the exterior powerhouse was given a rating of ‘Blue,’ corresponding to 5 to 10 years until major repairs are needed. The ‘blue’ rating is due to deterioration of the left exterior concrete powerhouse and Unit #3 penstock exterior wall. It is recommended that destructive testing be performed to evaluate the concrete and the potential extent of rehabilitation.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between May and July 2018 and consisted of an assessment of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Log Chute, Powerhouse Apron, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Right Wing Wall, Upstream Spillway Apron, Upstream Spillway Piers) and spillway structural walkway. The findings were summarized in a condition assessment report for Cooke Hydroelectric Dam (dated January 4, 2019).

The key findings from the Cooke condition assessment identified two site features (the right downstream embankment retaining wall and the log chute) that were rated as YELLOW (3 to 5 years before major repairs or replacement is necessary). Two site features (the left and right upstream wing walls) were rated as BLUE (5 to 10 years before major repairs or replacement is necessary). Other structures that were inspected during this condition assessment and are included in this report were given a GREEN rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTION

- Upstream Powerhouse & Spillway, July 17, 2018:
    - Two horizontal cracks and one vertical open construction joint at the South retaining wall. Three concrete spalls were observed in the open construction joint.
    - The South wing wall has one vertical crack and three diagonal cracks.
    - The steel trash rack bars were deteriorated up to 10%. Trash racks were approximately 20% blocked with debris.
    - One diagonal crack was observed in the divider pier between the powerhouse and the spillway.
    - One concrete spall and one open vertical construction joint were observed in the north retaining wall. The North wing wall has one vertical crack and one concrete spall.
    - One horizontal crack was observed at the north divider pier at Bay #1.
- Downstream Powerhouse & Spillway, July 18, 2018:
    - Lifting chains and connectors in the upstream spillway were deteriorated by up to 10%.
    - One horizontal crack at the north retaining wall along the upstream spillway. One concrete spall at the construction joint between the wing wall and the North retaining wall.
    - Trash rack bars are deteriorated up to 10% throughout. Trash racks in Bay #3 are completely blocked with Zebra mussels. Bay 3 is a dead bay with not generating unit installed.
    - One concrete spall at the pier between Bay #s 2 and 3.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require a significant amount of capital to implement.

Current Remediation Projects in LTFP

- Headgate Replacement – Capital
- Plant Lighting Upgrade – Capital
- Midslope Retaining Wall Replacement – Capital
- Remote Spillgate Control Installation – Capital
- Right Embankment Retaining Wall Replacement – Capital
- Left Embankment Core Wall Addition – Capital
- Right Embankment Core Wall Slab Extension – Capital
- Spillway Hoist Replacement – Capital
- Electrical Safety Upgrade – Capital
- Step Up Transformer (GSU) Replacement – Capital
- Station Battery Replacement – Capital
- Powerhouse Window Replacement – Capital
- Apron Joint/Crack Sealant -O&M
- Log Chute Concrete Repair – O&M
- Powerhouse Divider Wall Pier Repair – O&M
- Unit 1 Intake Deck Concrete Repair – O&M
- Right and Left Upstream Wingwall Repair – O&M

Remediation Projects not in LTFP

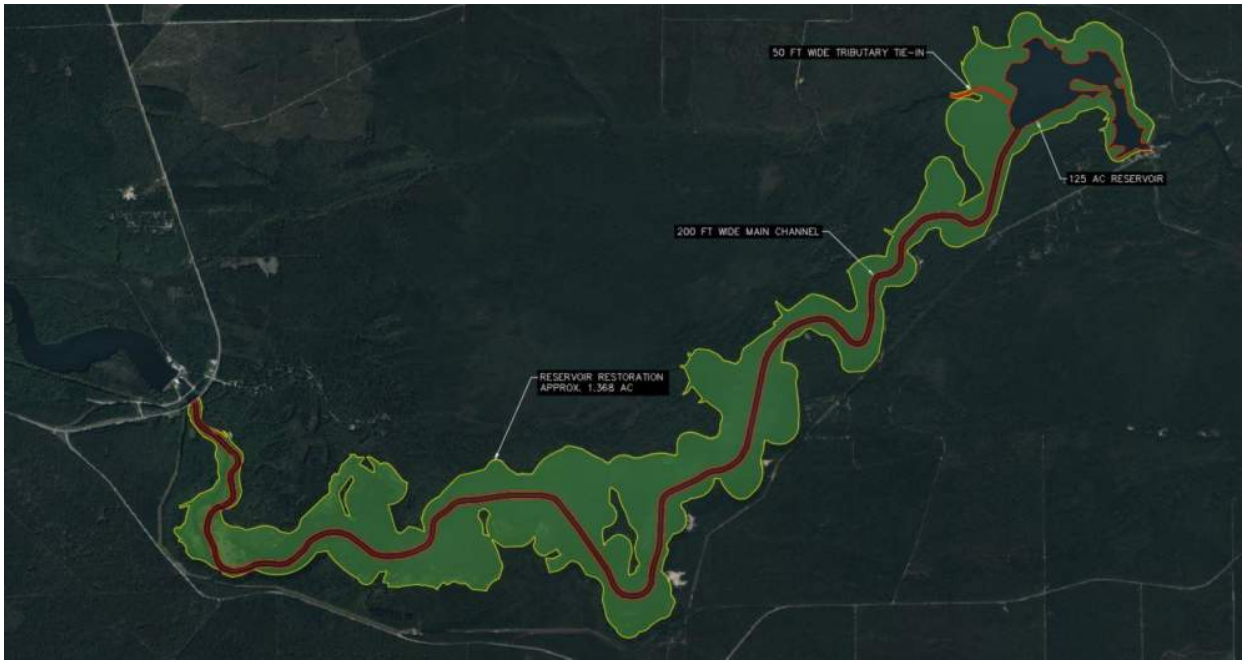
- Concrete Hallway Chambers Remediation
- Powerhouse Basement Concrete Repairs
- Units 1, 2, and 3 Concrete Repairs

Generation

The Cooke development consists of 3 units with a calculated maximum generation capacity of 78,840 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 27,803 MWH, contributing 6% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 39,568 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

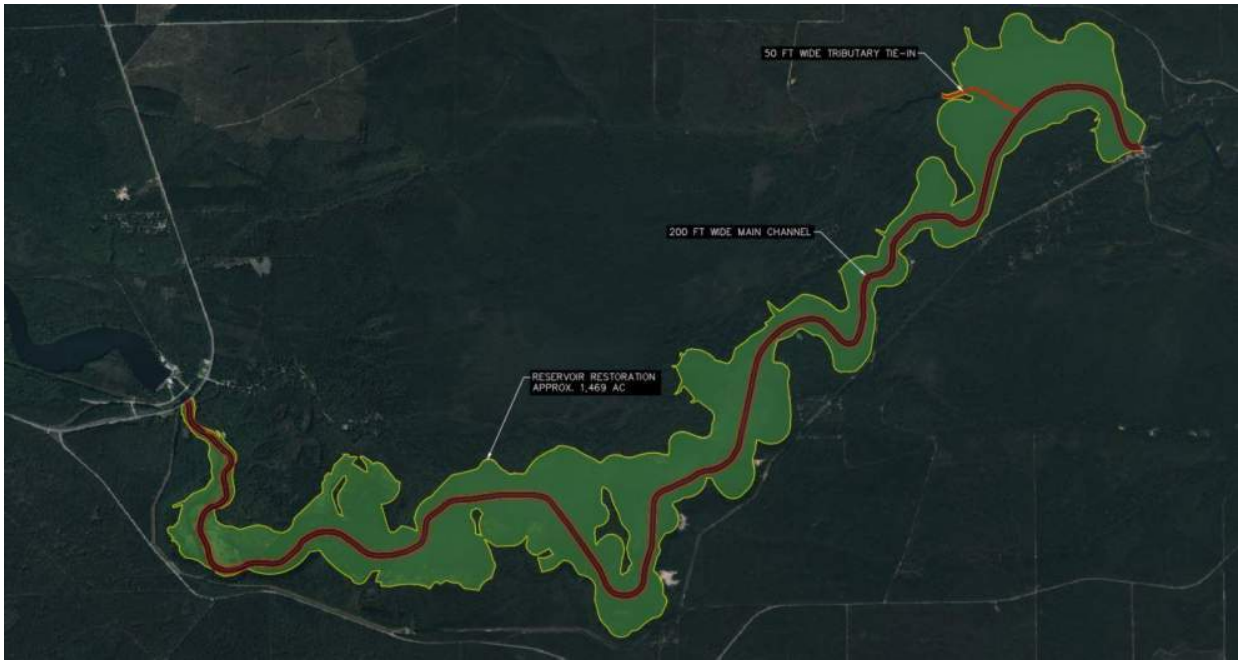
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - It is unlikely that the Cooke Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
  - Installing a new dam/weir structure will preserve the secondary barrier for invasive species attempting to travel upstream from Lake Huron.

- Cons/Risks
    - Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - The 46 kV substation will need to be relocated outside of the floodplain.
    - May also still cause sediment transport issues. The Cooke Dam should be removed after removal of the Mio, Alcona, Loud and Five Channels dams and before the Foote Dam so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - The Cooke Dam also received a State Historic Marker in 2005 and is on the National Register of Historic Places, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent. This opinion is based on the following considerations:
        - Two inhabited residential properties located along left riverbank 1,600 FT downstream of dam (located at high enough elevation to not be at a significant risk of damage)
        - Au Sable River Camping sites located along left and right banks starting at approximately 4,000 FT downstream of dam

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
  - Eliminates sediment transport issues
  - It is unlikely that the Cooke Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Cooke Dam should be removed after all upstream dams and before all downstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - The 46 kV substation will need to be relocated outside of the floodplain.
    - The dam serves as a secondary barrier to invasive species attempting to travel upstream from Lake Huron behind Foote Dam. Additional costs may be required to install sea lamprey control barriers (such as the FishPass system).
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - The Cooke Dam also received a State Historic Marker in 2005 and is on the National Register of Historic Places, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - The 46 kV substation could also remain in place under this option.
    - Keeping the dam in place will preserve the secondary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender.

E-2 COOKE DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Non Power Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Leave Powerhouse Intact	LS	$347,101.00	1	$ 347,101
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943.00	1	$ 64,943
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615.00	1	$ 23,615
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000.00	38	$ 1,900,000
	Subtotal				**$ 2,424,217**
Project Indirect	Owner's Cost				$ 363,633
	Engineering and Permitting				$ 911,152
	Construction Management & Biological Monitoring				$ 48,485
Contingency	Contingency				$ 242,422
Total					**$ 3,989,909**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

E-3 COOKE DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,700	$ 4,012
	Remove plant access road	STA	$ 590.00	3	$ 1,770
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	7	$ 16,534
	Remove turbines	Tons	$ 265.00	746	$ 197,690
	Remove generators	Tons	$ 265.00	130	$ 34,450
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove trash rack rake system	Tons	$ 265.00	14	$ 3,710
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove Powerhouse hoists	Tons	$ 265.00	12	$ 3,180
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12,000	$ 2,484,000
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove Powerhouse gates	Tons	$ 265.00	75	$ 19,875
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	19,175	$ 3,969,225
	Remove Spillway gates	Tons	$ 265.00	30	$ 7,950
	Remove Spillway hoists	Tons	$ 265.00	8	$ 2,120
	Drain 1627-acre reservoir	LS	$ 891,478.00	1	$ 891,478
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	137,684	$ 976,180
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	1,977,198	$ 14,018,336
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,053.00	2	$ 236,106
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	30,295	$ 443,519
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	360	$ 74,566
Salvage	Salvage Value	LS	$ (45,075.00)	1	$ (45,075)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	1,368	$ 4,240,800
	Plant former reservoir bottom	AC	$ 3,072.00	1,368	$ 4,202,496
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	14,000	$ 70,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	17,328	$ 5,775,943
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	69,312	$ 3,765,721
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	2,145,177	$ 17,161,419
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	1,368	$ 9,165,600
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	12,741	$ 1,911,112
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Subtotal				**$ 72,001,863**
Project Indirect	Owner's Cost				$ 10,800,280
	Engineering and Permitting				$ 3,663,051
	Construction Management & Biological Monitoring				$ 1,440,038
Contingency	Contingency				$ 7,200,187
Total					**$ 95,105,419**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

E-4 COOKE DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Cooke Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove lines from plant to substation	LF	$ 71.00	1,000	$ 71,000
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,700	$ 4,012
	Remove plant access road	STA	$ 590.00	3	$ 1,770
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	7	$ 16,534
	Remove turbines	Tons	$ 265.00	746	$ 197,690
	Remove generators	Tons	$ 265.00	130	$ 34,450
	Remove cranes	Tons	$ 265.00	19	$ 5,035
	Remove trash rack rake system	Tons	$ 265.00	14	$ 3,710
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove Powerhouse hoists	Tons	$ 265.00	12	$ 3,180
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	12,000	$ 2,484,000
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove Powerhouse gates	Tons	$ 265.00	70	$ 18,550
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	19,175	$ 3,969,225
	Remove Spillway gates	Tons	$ 265.00	30	$ 7,950
	Remove Spillway hoists	Tons	$ 265.00	8	$ 2,120
	Drain 1627-acre reservoir	LS	$ 891,478.00	1	$ 891,478
	Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	CY	$ 14.64	69,800	$ 1,021,872
	Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	830	$ 171,810
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	137,684	$ 976,180
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	2,226,000	$ 15,782,340
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,053.00	2	$ 236,106
Salvage	Salvage Value	LS	$ (45,075.00)	1	$ (45,075)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	1,469	$ 4,553,900
	Plant former reservoir bottom	AC	$ 3,072.00	1,469	$ 4,512,768
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	14,000	$ 70,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	19,558	$ 6,519,269
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	78,232	$ 4,250,345
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	2,433,484	$ 19,467,872
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	1,469	$ 9,842,300
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	16,889	$ 2,533,334
	Subtotal				**$ 78,436,836**
Project Indirect	Owner's Cost				$ 11,765,526
	Engineering and Permitting				$ 3,488,275
	Construction Management & Biological Monitoring				$ 1,568,737
Contingency	Contingency				$ 7,843,684
Total Project Costs					**$ 103,103,058**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

F FOOTE DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

F-1 FOOTE DAM SITE SUMMARY

Site Characteristics

- Two, 55-feet-high earth embankment dam sections, each with a concrete core wall.
- A 30-feet-high concrete spillway with three, 14.5-feet-high steel radial gates and a concrete-lined discharge channel extending approximately 210 feet downstream with a 12-feet-high concrete weir located approximately 65 feet downstream.
- A reservoir with a normal surface area of 1,702 acres at elevation 639.2 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 32,380 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 7,229 kilowatts (kW).
- A 25-feet-long concrete apron in the tailrace with concrete and sheet pile (right downstream side only) retaining walls extending 165 and 290 feet downstream, respectively.
- Associated appurtenant structures.
- Run-of-River operations



Relicensing Issues

- Major license (referenced in License Order, subject to form L-5)
- Water Quality out of compliance for temp and potentially dissolved oxygen (DO)
- Considerable Public Recreation use on Au Sable River. Foote Reservoir known for fishing and boating as most downstream reservoir and proximity to Lake Huron
- Majority public lands (USFS) and limited private property adjacent to shoreline
- Reservoir closest to Oscoda and Au Sable (population centers) on Lake Huron and potential for more public input different from reservoirs and reaches higher in the watershed (regional differences in interest areas)

Future License Conditions

- Operations monitoring/automation
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Wildlife Management Plans
- Sediment Management
- Consult with USFS
- Land Management plan for buffer lands
- Fish stocking/funding
- Fish Passage (trap & truck or fish ladder)
- Land/Shoreline Management
- Historic Properties Management Plan
- Retirement study
- Operational restrictions to run-of-river

Risks to Operating under another 50-year License

- Fish passage requirements or mitigation
- Temperature and potential DO exceedances
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Foote Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The exterior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. However, the interior powerhouse was given a rating of 'Yellow,' corresponding to 3 to 5 years until major repairs are needed. The 'Yellow' rating is due to observed cracks and enlarged joints which indicate movement of the structure, particularly at the downstream left corner of the powerhouse. It is recommended that additional monitoring of the observed movement be performed moving forward, including periodic photographic documentation and additional survey points. It is also recommended that a thorough inspection of the interior crane be performed by a firm that certifies cranes.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder between June and July 2018 and consisted of the concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Apron, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Emergency Spillway Concrete Sloping Wall, Log Chute, Spillway Abutment, Downstream Spillway Apron, Spillway Structural Walkway Deck, Training Wall, Tumble Bay and Spillway, Upstream Left Wing Wall, Upstream Powerhouse Piers, Upstream Right Wing Wall, Upstream Spillway Apron, Upstream Spillway Piers) and spillway structural walkway. The findings were summarized in a condition assessment report for Foote Hydroelectric Dam (dated January 4, 2019).

The key findings from the Foote condition assessment identified two site features (the log chute and training wall) that are rated as BLUE (5 to 10 years before major repairs or replacement is necessary). In addition, the vertical joint at the transition between the sloped and horizontal portions of the downstream right embankment retaining wall should be repaired of damaged concrete and the joint cleaned and re-sealed. Less than 50% of the emergency spillway concrete sloping was visible and it is recommended the wall be cleared of vegetation overgrowth so that the remainder of the wall can be properly inspected. Golder recommended that the spillway structural walkway

deck be refinished in areas with protective coating loss to ensure corrosion does not reduce the design life of the structure, as well as cleaning and re-sealing of the joints between slabs. The joint between the wing walls and abutments on both the left and right wing walls should continue to be monitored during routine dive inspections. The grout seal for an old cofferdam used for construction on the upstream side of the spillway has exhibited spalling and should continue to be monitored to ensure the irregular surface does not cause advanced spalling of the existing apron concrete. Cleaning and resealing of the joints between the upstream spillway piers and structural walkway deck that were observed to have loose and separated sealant is also recommended. Other structures that were inspected during this condition assessment and included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- Powerhouse, July 30, 2018:
    - One concrete spall and an open construction joint at the upstream south retaining wall.
    - The trash racks are deteriorated up to 10%.

  - The upstream concrete divider pier between bays 2 and 3 spalled at the water surface.
  - One concrete spall and an open vertical construction joint at the downstream south retaining wall.
  - One vertical concrete crack between the log chute and draft tube bay 1.
  - Construction joints in the downstream apron slab at several locations, and 7 areas of concrete spalling.
- Spillway, July 31, 2018:
  - One open construction joint between the north upstream retaining wall and the north wing wall.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement.

Current Remediation Projects in LTFP

- ADA Ramp Replacement – Capital
- Units 1, 2, and 3 Governor Replacement – Capital
- Fish Net Frame Removal – Capital
- Spillway Hoist Replacement – Capital
- Trash Rack Ergonomics Project – Capital
- Electrical Safety Project – Capital
- Station Battery Replacement – Capital
- Unit 2 Wicket Gate Replacement – Capital
- Right Steel Sheet Pile Cut Off Wall PMF Overtopping Replacement – Capital
- Auxiliary Spillway Pilot Channel and Embankment Crest Grading – O&M
- Downstream Concrete Repairs – O&M

Remediation Projects not in LTFP

- Emergency Spillway
- Powerhouse Basement Leaks
- Units 1 and 3 Headgate Realignment
- Units 1, 2, and 3 Concrete Repairs
- Left Downstream Powerhouse Wall Remediation/Repair

Generation

The Foote development consists of 3 units with a calculated maximum generation capacity of 78,840 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 30,711 MWH, contributing 7% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 61,642 MWH.

Surrendering (projected to 2035 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
    - Reduces legal liability and maintenance of existing facilities.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
    - It is unlikely that the Foote Dam will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
    - Installing a new dam/weir structure will preserve the primary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Emergency spillway and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405.
    - May also still cause sediment transport issues. The Foote Dam should be removed after removal of all upstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
    - Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
        - Archeological sites are also reported to be contained within the project area, which may create additional resistance to the dam removal.
    - Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
        - There are several homes located along the reservoir edge that are part of the Bissonette subdivision and Seven Mile Hill HOA, many of which have their own private boat docks.
    - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
    - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potential DO).
  - Eliminates sediment transport issues
  - It is unlikely that the Foote Dam impoundment will contain contaminated PFAS sediments due to its distance downstream from the Camp Grayling Superfund site.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Foote Dam should be removed after all upstream dams so that downstream re-sedimentation does not impact previously removed and restored dam sites.
  - The dam serves as a primary barrier to invasive species attempting to travel upstream from Lake Huron. Additional costs may be required to install sea lamprey control barriers (such as the FishPass system by the Great Lakes Fishery Commission).

- Public disapproval of this option due to its socioeconomic and recreational impact.
    - Archeological sites are also reported to be contained within the project area, which may create additional resistance to the dam removal.
- Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir extents.
    - There are several homes located along the reservoir edge that are part of the Bissonette subdivision and Seven Mile Hill HOA, many of which have their own private boat docks.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
    - Keeping the dam in place will preserve the primary barrier for invasive species attempting to travel upstream from Lake Huron.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Fish passage installation required.
    - Water quality (temperature and potential DO) may still be out of compliance for cold water fisheries under License Article 405. Significant costs may be required bring the water temperature into compliance to support cold water fisheries.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Putting this project on the market as part of a large portfolio is a near term action that can potentially provide an exit strategy from the asset. There is time before having to make a decision on relicensing or surrender to test the market and negotiate with potential buyers.

F-2 FOOTE DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Foote Dam
Decommissioning Cost Evaluation - Non- Power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and demolition	Leave Powerhouse Intact	LS	$ 219,294	1	$ 219,294
	Remove or lay-up equipment: Disable generating capacity	LS	$ 64,943	1	$ 64,943
	Remove or lay-up equipment: Remove electrical equipment	LS	$ 23,615	1	$ 23,615
Environmental and Restoration	Installation of Fish Passage	VLF	$ 50,000	48	$ 2,400,000
	Spillway gate modification to maintain flow/pond level	LS	$ 88,558	1	$ 88,558
Subtotal					**$ 2,796,410**
Project Indirect	Construction Management				$ 279,641
	Owner's Cost				$ 419,462
	Engineering and Permitting				$ 936,656
Contingency	Contingency				$ 279,641
Total					**$ 4,711,810**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

F-3 FOOTE DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Foote Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	60	$ 4,260
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	4,500	$ 10,620
	Remove plant access road	STA	$ 590.00	36	$ 21,240
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	16	$ 37,792
	Remove turbines	Tons	$ 265.00	748	$ 198,220
	Remove generators	Tons	$ 265.00	283	$ 74,995
	Remove cranes	Tons	$ 265.00	30	$ 7,950
	Remove diesel generator	Tons	$ 266.00	2	$ 532
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove hoists	Tons	$ 266.00	9	$ 2,394
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	11,900	$ 2,463,300
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	58	$ 15,370
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	11,630	$ 2,407,410
	Remove Spillway gates	Tons	$ 220.00	30	$ 6,600
	Remove hoist rails/platform	Tons	$ 221.00	7	$ 1,547
	Remove Spillway hoists	Tons	$ 220.00	5	$ 1,100
	Drain 1702-acre reservoir	LS	$ 949,360.00	1	$ 949,360
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	1,390,991	$ 9,862,127
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	1,536,080	$ 10,890,808
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
	Demolish/remove portion of earth dam to create sufficient breach: Excavation	CY	$ 14.64	45,305	$ 663,266
	Demolish/remove portion of earth dam to create sufficient breach: Reinforced concrete demolition	CY	$ 207.00	392	$ 81,144
	Demolish/remove portion of earth dam to create sufficient breach: Sheet piling removal	SF	$ 2.36	2,912	$ 6,873
Salvage	Salvage Value	LS	$ (62,930.00)	1	$ (62,930)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	1,503	$ 4,659,300
	Plant former reservoir bottom	AC	$ 3,072.00	1,503	$ 4,617,216
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	14,500	$ 72,500
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	23,830	$ 7,943,254
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	95,320	$ 5,178,736
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	2,972,376	$ 23,779,008
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	1,503	$ 10,070,100
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	14,074	$ 2,111,112
	Concrete Weir Installation	LF	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Subtotal				**$ 88,486,392**
Project Indirect	Construction Management & Biological Monitoring				$ 1,769,728
	Owner's Cost				$ 13,272,959
	Engineering and Permitting				$ 3,497,024
Contingency	Contingency				$ 8,848,640
Total					**$ 115,874,743**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

F-4 FOOTE DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Foote Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility separation	Remove lines from plant to substation	LF	$ 71.00	60	$ 4,260
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	4,500	$ 10,620
	Remove plant access road	STA	$ 590.00	36	$ 21,240
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,362.00	16	$ 37,792
	Remove turbines	Tons	$ 265.00	748	$ 198,220
	Remove generators	Tons	$ 265.00	283	$ 74,995
	Remove cranes	Tons	$ 265.00	30	$ 7,950
	Remove diesel generator	Tons	$ 266.00	2	$ 532
	Remove fixtures	Tons	$ 265.00	5	$ 1,325
	Remove hoists	Tons	$ 266.00	9	$ 2,394
	Remove electrical equipment	LS	$ 64,943.00	1	$ 64,943
	Reinforced concrete/masonry demolition (spill tubes, intake/tailrace retaining walls, and aprons)	CY	$ 207.00	11,900	$ 2,463,300
	Remove trash racks	Tons	$ 265.00	15	$ 3,975
	Remove valves	Tons	$ 265.00	4	$ 1,060
	Remove gates	Tons	$ 265.00	58	$ 15,370
	Demolish and remove spillway including concrete weir and apron: Reinforced concrete demolition	CY	$ 207.00	11,630	$ 2,407,410
	Remove Spillway gates	Tons	$ 220.00	30	$ 6,600
	Remove hoist rails/platform	Tons	$ 221.00	7	$ 1,547
	Remove Spillway hoists	Tons	$ 220.00	5	$ 1,100
	Drain 1702-acre reservoir	LS	$ 949,360.00	1	$ 949,360
	Demolish/remove entire earth dam, core wall, and emergency spillway: Excavation	CY	$ 14.64	202,000	$ 2,957,280
	Demolish/remove entire earth dam, core wall, and emergency spillway: Reinforced concrete demolition	CY	$ 207.00	1,750	$ 362,250
	Demolish/remove entire earth dam, core wall, and emergency spillway: Sheet piling removal	SF	$ 2.36	13,000	$ 30,680
	Remove accumulated sediments: Dam pilot channel dredging	CY	$ 7.09	1,390,991	$ 9,862,127
	Remove accumulated sediments: Reservoir dredging	CY	$ 7.09	1,536,080	$ 10,890,808
	Remove accumulated sediments: Mobilization/Demobilization	LS	$ 118,077.00	1	$ 118,077
Salvage	Salvage Value	LS	$ (62,930.00)	1	$ (62,930)
Environmental and Restoration	Seed former reservoir bottom	AC	$ 3,100.00	1,503	$ 4,659,300
	Plant former reservoir bottom	AC	$ 3,072.00	1,503	$ 4,617,216
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	14,500	$ 72,500
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5,000	$ 750,000
	Bank Stabilization: Hard Structure	LF	$ 333.33	23,830	$ 7,943,254
	Bank Stabilization: Live stakes and Jute Matting	LF	$ 54.33	95,320	$ 5,178,736
	Reuse (grading) of non-contaminated excavated and dredged material	CY	$ 8.00	3,129,071	$ 25,032,568
	Grading & Surface Preparation/Amendments	AC	$ 6,700.00	1,503	$ 10,070,100
	Channel creation: Riffle section at downstream tie in	CY	$ 150.00	15,556	$ 2,333,334
	Sea Lamprey Control/Fish Pass System	LS	$ 2,000,000.00	1	$ 2,000,000
	Subtotal				**$ 93,101,101**
Project Indirect	Construction Management & Biological Monitoring				$ 1,862,023
	Owner's Cost				$ 13,965,166
	Engineering and Permitting				$ 3,258,539
Contingency	Contingency				$ 9,310,111
Total Project Cost					**$ 121,496,940**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

Foote

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

CONSUMERS ENERGY COMPANY

CALKINS BRIDGE HYDROELECTRIC PROJECT

CONCEPTUAL DECOMMISSIONING COST ESTIMATE FERC NO. P-785



Calkins Bridge Hydroelectric Project

OCTOBER 2024; REVISED OCTOBER 2025

wsp

CALKINS BRIDGE HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE

CONSUMERS ENERGY COMPANY

PROJECT NO.: US0038224.9874
DATE: OCTOBER 2025

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QUALITY MANAGEMENT

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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 3

2.1 Calkins Bridge Dam 3

3 STUDY APPROACH 5

3.1 Assumptions 5

3.2 Limitations 5

4 COST ESTIMATE SUMMARY 7

4.1 Class Estimates 7

4.1.1 Class 5 Estimate 7

4.2 Cost Estimate Summaries 7

4.2.1 Quantities and Unit Costs 7

4.2.2 Uncertainty Areas 8

4.2.3 Calkins Bridge Hydroelectric Project Cost Estimate Activities 8

4.2.4 Cost Estimate Results Summary 15

BIBLIOGRAPHY 16

TABLES

TABLE 4.1 CALKINS BRIDGE HYDROLELECTRIC COST ESTIMATE ACTIVITIES BY SCENARIO 8
TABLE 4.2 CALKINS BRIDGE DAM COST ESTIMATE RESULTS SUMMARY 15

APPENDICES

A CALKINS BRIDGE HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 CALKINS BRIDGE HYDROELECTRIC DAM SITE SUMMARY

A-2 CALKINS BRIDGE HYDROELECTRIC DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

A-3 CALKINS BRIDGE HYDROELECTRIC DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

A-4 CALKINS BRIDGE HYDROELECTRIC DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

1 EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets. To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

This report details the surrendering considerations and pricing considered in the roadmap for 1 of the 13 hydropower facilities, Calkins Bridge Dam, located within the Kalamazoo River Watershed, in Allegan County.

Three surrender scenarios with specific assumptions were considered in preparing the cost estimates for each surrender option:

1. Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
2. Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
3. Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

For the subject facility and scenario, a class 5 cost estimate was prepared in Q4 2022 dollars, identifying and quantifying the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental and restoration work of the Kalamazoo River, as well as associated project indirect costs and recommended contingency. Schematics utilized for the evaluation of the Surrender and Decommission – Partial and Full Removal for how the reservoir may be reshaped in the decommissioning restoration are presented. Additional assumptions and limitations by site are presented herein.

2 INTRODUCTION

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added. This report details costs and considerations prepared for 1 of the 13 hydropower facilities, Calkins Bridge Dam, located along the Kalamazoo River system in Allegan County.

The Kalamazoo River system is the seventh largest river basin in Michigan. It is in southwest Michigan and incorporates 9 counties including Hillsdale, Jackson, Eaton, Calhoun, Barry, Kalamazoo, Kent, Ottawa, Van Buren, and Allegan counties. The Kalamazoo River watershed drains more than 2,020 square miles of land area, and approximately 899 miles of tributaries flow directly into the mainstream.

The three surrendering scenarios include:

- Surrender – No-Power Generation
- Surrender and Decommission – Partial Removal
- Surrender and Decommission – Full Removal

The objective of the conceptual decommissioning cost estimate is to identify the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental work, and restoration of the Kalamazoo River, as well as associated project indirect costs and recommended contingencies.

2.1 CALKINS BRIDGE DAM

The Calkins Bridge dam (FERC Project Number 785), located in the Kalamazoo River in Valley Township, Allegan County, Michigan consists of a 30-foot-high, 1,335-foot-long earth embankment dam section with 132 feet long concrete spillway with six steel radial gates which discharge to a concrete apron extending approximately 54 feet downstream. The reservoir, with a normal surface area of 1,550 acres at elevation 615.0 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 17,000 acre-feet.

The Calkins Bridge Hydroelectric Project features a public road, Allegan Dam Road, that crosses the top of the earth embankment dam and spans the spillway. Any plans for partial or complete removal must account for the bridge over the

spillway. Options 2 and 3 include an estimated cost for constructing a new seven-span bridge and associated roadway. The actual cost for a new river crossing could vary significantly based on the breach width needed to handle a 100-year flow. If decommissioning occurs, more detailed information on valley geology, topography, and the extent of the restored river's 100-year floodplain would be necessary to estimate costs more accurately.

3 STUDY APPROACH

3.1 ASSUMPTIONS

WSP analyzed the costs for three scenarios involving the surrender of the hydropower facilities before the current license expires. These scenarios include 1) Surrender – No-Power Generation: 2) Surrender and Decommission – Partial Removal; and 3) Surrender and Decommission – Full removal. Detailed description of these alternatives are as follows:

Surrender – No Power Generation Operation

The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.

Surrender and Decommission - Partial Removal

The partial removal scenario evaluates the partial removal of the dam by reducing the earthen dam structure while fully removing the powerhouse and generation facilities. This reduction would create a sufficient breach to pass the 100-year flood through the reestablished river channel, ensuring that the incremental rise at the dam site would be less than 0.10 foot. This scenario also considers the potential to maintain some form of upstream reservoir system while developing a new weir control structure.

This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated.

Schematics for the partial removal scenario for the reservoir and dam structure are provided in Appendix A.

Surrender and Decommission - Full Removal

The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities, earthen dam, concrete spillway, tailrace and retaining structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions. To minimize the transport and improve stabilization of the sediment within the reservoir, the reservoir would be drawn down in a controlled manner. Hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly.

Schematics for the full removal scenario for the reservoir reservation and dam structure are provided in Appendix A.

3.2 LIMITATIONS

- Prior costs provided by Consumers for these scenarios and developed by Kiewit Corporation in 2022, as available, and Mead & Hunt (M&H) in 2021 were used as the foundation of these estimates. Sequencing of work follows the descriptions as detailed by M&H with additional measures incorporated following removal as part of the reservoir restoration. Estimates were supplemented and expanded based on similar experiences from other applicable dam removal projects.
- Information related to sediment volumes and characterization are estimated and assumed based on watershed research for potential hazardous contamination. As no data is available at this time, there is significant risk associated with the uncertainty to the volumes and level of contamination for management. Unless documentation of known hazardous spills were identified for the watershed, it was considered as a mix of non-

contaminated and contaminated non-hazardous sediments for removal and disposal, as detailed herein. Sediment investigations would occur after a decision to surrender and decommission were approved.

- These estimates are based on Q4 2022 dollars at the time of preparation.
- Cost estimates, by nature, are as best as the information available at the time of preparation. Estimates should be reconsidered and updated as new information is obtained and as market conditions change.
- Additional assumptions and limitations considered for each cost item to derive the presented unit pricing and quantity are detailed herein.

4 COST ESTIMATE SUMMARY

4.1 CLASS ESTIMATES

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, costs accuracy is generally assumed to increase as project development nears completion. As such construction stage cost estimates are necessarily considered the most accurate and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE). The level of information or considerations prepared for this independent evaluation, with limitations, would be considered as Class 5 estimate per AACE.

4.1.1 CLASS 5 ESTIMATE

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its accuracy ranges -50% on the low side and +100%on the high side.

Class 5 cost estimate accuracy range: -50% to +100%

Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

4.2 COST ESTIMATE SUMMARIES

Costs for each surrender scenario were calculated for (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. Detailed descriptions for each item under each scenario are provided below.

All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (4th Quarter 2022 levels). The conceptual decommissioning cost estimates for the subject dam are included in Appendix A.

4.2.1 QUANTITIES AND UNIT COSTS

Quantities of pieces of equipment and/or bulk material commodities used in the cost estimates were intended to be reasonable and representative of projects of this type. Material quantities were prepared by M&H in 2021 for categorial items included within their estimate. As appropriate, WSP simplified unit measurements and unit pricing for subject activities. For additional activity items incorporated by WSP, quantities were estimated from the schematic renderings prepared for the subject site and included within Appendix A, as detailed below. Upon determining corrective unit quantities and unit costs, cost components for each activity were determined by the multiplication of the unit quantity by unit cost, rounded to the nearest whole dollar.

4.2.2 UNCERTAINTY AREAS

This estimate will be based on similar experiences from other projects. Therefore, some specific information about the subject site is unknown. Additional studies would be needed to determine physical and chemical characteristics of soils and sediments, potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures, type of vegetation and presence of non-native species, archaeological resources and historic structures, hydrology and hydraulic characteristics, as well as ecology and biology upstream and downstream of the structures.

4.2.3 CALKINS BRIDGE HYDROELECTRIC PROJECT COST ESTIMATE ACTIVITIES

Table 4.1 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.1 Calkins Bridge Hydrolelectric Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Substation		X	X
	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Leave Powerhouse Intact	X		
	Remove Security Fencing		X	X
	Remove Septic Tank/Drain Field		X	X
	Removal of Right Downstream Sheet Pile Wall		X	X
	Remove Piezometers		X	X
	Remove All Powerhouse Equipment		X	X
	Remove or Lay Up Equipment	X		
	Demolish and Remove Concrete/Masonry		X	X
	Remove Trash Racks		X	X
	Remove Gates - Powerhouse		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Sheet Pile - Powerhouse		X	X
	Demolish and Remove Concrete		X	X
	Remove Gates - Spillway		X	X
	Remove Gate Hoist		X	X
	Remove Rails		X	X
	Remove Sheet Pile - Spillway		X	X
	Modify Spillway to Maintain Flow/Pond Level	X		
	Drain Reservoir		X	X
	Remove Earth Dam			X
	Remove Portion of Earth Dam to Create Sufficient Breach		X	
	Remove Accumulated Non-Contaminated Sediments		X	X
Abatement and Regulated Material Removal	Remove Contaminated Soil (Superfund Site)		X	X
	Disposal of Contaminated Soil		X	X
Environmental and Restoration	New Bridge		X	X
	Roadway Reconstruction		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Seed Former Reservoir Bottom		X	X
	Plant Former Reservoir Bottom		X	X
	Apply Erosion Control Measures: Silt Fence		X	X
	Apply Erosion Control Measures: Rip Rap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes and Jute Matting		X	X
	Concrete Weir Installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring & O&M	X	X	X
Contingency	Contingency	X	X	X

Remove Substation

Lump sum cost was taken from the M&H cost estimate for removal of the substation. The partial and full removal options assume that the Calkins Bridge Plant would be demolished and therefore, local transmission would no longer be required.

Remove Lines from Plant to Substation

Lump sum cost taken from M&H cost estimate for removal of buried cable. The partial and full removal options assume that the Calkins Bridge Plant would be demolished and therefore, electric lines between the powerhouse and substation would be removed.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Removal of Right Downstream Sheet Pile Wall

Price per square foot was taken from the M&H estimate. For both the partial and full removal, the sheet pile wall would no longer be necessary and would therefore be removed.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 6 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove All Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. Under the partial and full removal options, all the plant electromechanical equipment, controls, protection, and station transformers would be removed from the powerhouse and transported for off-site disposal.

Remove or Lay Up Equipment

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance would be decommissioned and laid-up in the powerhouse.

Demolish and Remove Concrete/Masonry

Price per cubic yard was taken from the estimate by M&H. Under the partial and complete removal scenarios, concrete and masonry associated with the dam and powerhouse structure will no longer be necessary and will be removed.

Remove Trash Racks

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, trash racks will no longer be necessary and will be removed.

Remove Gates – Powerhouse

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, gates will no longer be necessary and will be removed.

Remove Sheet Pile – Powerhouse

Price per square foot was taken from the M&H estimate. For both the partial and full removal, the sheet pile wall at the powerhouse will no longer be necessary and will be removed.

Demolish and Remove Concrete

Price per cubic yard was taken from the estimate by M&H. Under the partial and complete removal scenarios, concrete associated with the dam and powerhouse structure will no longer be necessary and will be removed.

Remove Gates – Spillway

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, spillway gates will no longer be necessary and will be removed.

Remove Gate Hoist

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, hoists will no longer be necessary and will be removed.

Remove Rails

Cost per ton was taken from the M&H estimate. Under the partial and complete removal of hoist rails will no longer be necessary and will be removed.

Remove Sheet Pile – Spillway

Price per square foot was taken from the M&H estimate. For both the partial and full removal, the sheet pile wall at the spillway will no longer be necessary and will be removed.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Drain Reservoir

Lump sum cost was taken from the M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse and spillway during removal of the powerhouse structure. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Removal of the spillway will require the installation of a temporary cofferdam.

Remove Earth Dam

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Remove Portion of Earth Dam to Create Sufficient Breach

Cubic yard unit price was taken from the M&H estimate for a similar structure. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Remove Accumulated Non-Contaminated Sediments

Cubic yard unit price was taken from the M&H estimate. It is assumed that the 250-foot-wide main channel will be re-established with limited dredging. WSP determined approximately 262,623 cubic yards of material will need to be removed to clear fine-grain sediments and re-establish the channel where necessary beyond the pilot channel. This amount is reduced under the partial removal scenario to 188,976 cubic yards to account for limited dredging within the new impoundment for the partial removal.

Remove Contaminated Soil (Superfund Site)

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from 50% of the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Disposal of Contaminated Soil

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

New Bridge

Under partial and complete removal options, the existing Allegan Dam Road, which crosses the top of the earth embankment dam, would need to be replaced with a new, approximately 12,600 square foot bridge to span the river.

Roadway Reconstruction

Under the partial and complete removal options, the existing Allegan Dam Road, which crosses the top of the earth embankment dam, would need to be reconstructed.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Channel Creation - Riffle Section at Downstream Tie In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 250-feet-wide, 500-feet-long, and 2-feet-deep for the partial and full. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Seed Former Reservoir Bottom

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Plant Former Reservoir Bottom

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 100% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures: Silt Fence

Price per linear foot and unit quantity derived from WSP project experience. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures: Rip RaCp Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Kalamazoo River.

Bank Stabilization - Live Stakes and Jute Matting

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Kalamazoo, as well as both banks for all tributary lengths.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 19-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 9-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner's cost of 15% of the construction subtotal, less the contaminated material disposal cost, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $412,780 for the environmental/social impact study (prepared by M&H for the non-power evaluation) and $400,000 for design of a fish ladder were applied.

For the partial removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring & O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.4 COST ESTIMATE RESULTS SUMMARY

The full conceptual decommissioning cost estimate for the subject dam site and scenario is provided in Appendix A. Table 4.2 provides a summary of total cost by category for Calkins Bridge Hydroelectric.

Table 4.2 Calkins Bridge Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	$338,549	$39,664	$39,664
Decommissioning and Demolition	$177,116	$3,757,012	$4,577,371
Abatement and Regulated Material Removal	-	$140,581,586	$140,581,585
Salvage	-	-	-
Environmental and Restoration	$950,000	$25,470,786	$36,065,673
Subtotal	**$1,465,665**	**$169,849,048**	**$181,264,293**
Project Indirect	$1,235,495	$7,997,006	$9,937,131
Contingency Cost	$146,567	$16,984,905	$18,126,429
Total Project Cost	**$2,847,727**	**$194,830,959**	**$209,327,853**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.

2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

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APPENDIX

A CALKINS BRIDGE HYDROELECTRIC PLANT CONCEPTUAL DEMOLITION COST ESTIMATE

A-1 CALKINS BRIDGE HYDROELECTRIC DAM SITE SUMMARY

Site Characteristics

- A 30-feet-high earth embankment dam section totaling 1,335 feet in length.
- A 132-feet-long concrete spillway with six steel radial gates which discharge to a concrete apron extending approximately 54 feet downstream.
- A reservoir with a normal surface area of 1,550 acres at elevation 615.0 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 17,000 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 2,550 kilowatts (kW).
- A 58-feet-long concrete-lined tailrace with retaining walls.
- Associated appurtenant structures.
- Low Hazard classification dam: Allegan Dam Road crosses across the top of or near the dam with integrated structural connections to the dam incorporated into design.



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Indiana bat & Kerner Blue butterfly potential
- Potential archaeological resources
- Considerable Recreation use and access from MDNR Facilities
- Popular fishery downstream of dam
- Shoreline management and private property ownership
- Sediment pollution from upstream super fund site.

Future License Conditions

- Operations monitoring, automation and compliance
- Water Quality mitigation/monitoring
- Recreation enhancements
- RTE Species Management Plans
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational run-of-river

Risks to Operating under another 50-year License

- Fish ladder was blocked with a removable plug in 1999 is a likely topic to investigate in next relicensing; however, Allegan may be best without it to limit invasive fish access and due to toxic sediments and fish consumption advisories in the Kalamazoo River
- Potential for temperature and dissolved oxygen (DO) exceedances
- Continued responsibility to meet regulatory requirements.
    - Operational monitoring for run-of-river, lake levels, and gage and instrumentation
    - Lake Sturgeon Spawning Habitat Enhancement Plan and a Reservoir Drawdown Management Plan
    - Downstream fish passage protection (existing racks 1.5 inch spacing)
    - Water quality monitoring downstream of the project and analyzing sediments and fish tissue in Lake Allegan for various contaminants, including total mercury and polychlorinated biphenyls (PCBs).
    - Plan to monitor and, where appropriate, control or eliminate invasive species and to implement measures to protect the Indiana bat, including restrictions on removing dead or dying trees near the shoreline.
    - Implement a Historic Properties Management Plan
    - Recreation: majority of use and access is provided by MDNR
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites.
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled "Allegan Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo," The exterior and interior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. While no immediate major repairs are required, additional monitoring of cracks along interior columns and displacement of the exterior walkway is recommended.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 28, 2018 and consisted of the above-water concrete features/structures (Downstream Left Embankment Retaining Wall, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Left Wing Wall/Abutment, Log Chute, Right Wing Wall/Abutment, Spillway Abutment, Spillway and Downstream Spillway Piers, Spillway Structural Walkway Deck, Upstream Powerhouse Piers, Upstream Spillway Piers). The findings were summarized in a condition assessment report for Allegan Hydroelectric Dam (dated May 14, 2019).

The structures that were inspected during this condition assessment and are included in this report were generally found to be in good condition and given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTION

- July 7, 2021, and August 10, 2022 Underwater Condition Assessment
    - The underwater portions of the Calkins Bridge Hydroelectric Dam in overall good condition. All features/structures inspected were given a green rating, indicating that that major repair will not be needed for about 10 to 20 years. Deficiencies were limited to minor spalls, concrete aggregate pop-outs, minor cracking, surface scaling/erosion, and concrete surface flaking.
    - A vertical crack was observed in the upstream right wingwall, which was not observed in the 2016 underwater inspection. Additional monitoring of a vertical crack in the upstream right wingwall is recommended every 5 years. Continued removal of debris from the upstream powerhouse trash racks and spillway is also recommended.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement.

Current Remediation Projects in LTFP

- Unit 1 Wicket Gate Replacement - Capital
- Powerhouse Roof Replacement – Capital
- Unit 3 Static Exciter Replacement – Capital
- 199 Breaker Replacement - Capital
- Units 1, 2, and 3 Governor Replacements – Capital
- Bridge Inspection (Structures and Improvements) – O&M
- Tailrace Access Safety Ergonomics – O&M

Remediation Projects not in LTFP

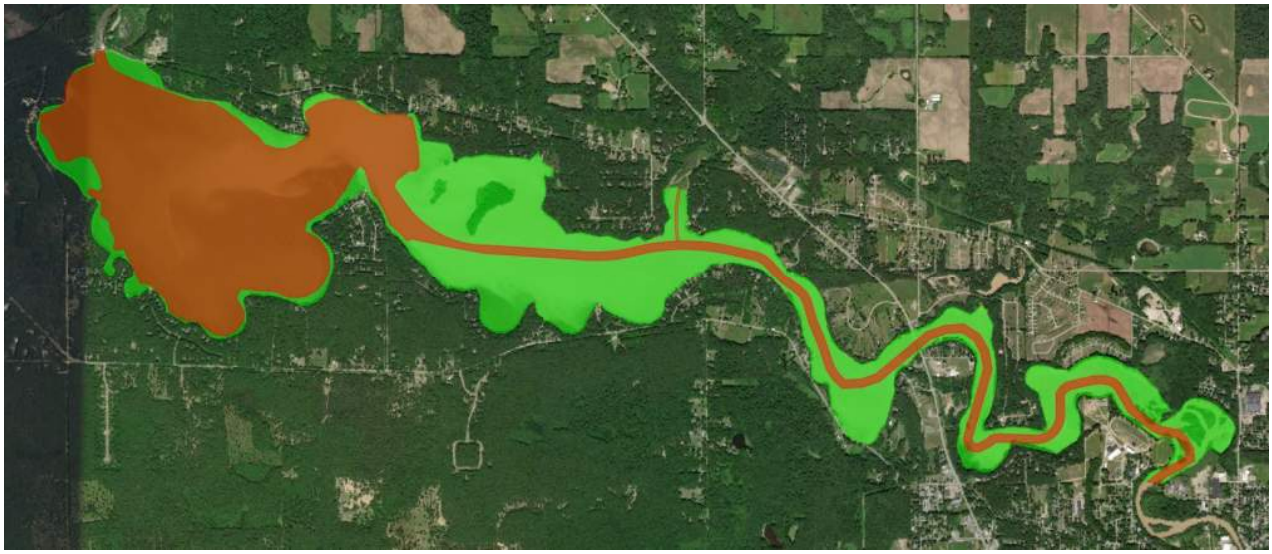
- Trash Rack Remediation
- Intake Concrete Repairs
- Powerhouse Concrete Repairs (From replacing wooden gates)
- Crane Remediation
- Units 1, 2, and 3 Concrete Repairs
- Back Deck Concrete Repairs
- Possible Bridge Replacement

Generation

The Allegan development consists of 3 units with a calculated maximum generation capacity of 22,338 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 13,628 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 15,432 MWH.

Surrendering (projected to 2040 at end of licensing period and following FERC decommissioning process)

Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - This option will require significant coordination with regulatory agencies and external stakeholders due to changes in land use, majority of surrounding property is residential
  - The dam and reservoir fall within the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund site. Sediment characterization required to determine distribution of potential contamination. Requires coordination with EPA to determine responsibility of cost burden.
    - EPA is currently working to remediate the Kalamazoo River, but this portion has not yet been reached. The dam is in Area 6 of Operable Unit 5 (OU5) in the cleanup plan. The EPA has completed cleanup on OU2, OU3, and OU4. Currently there are cleanup plans in place for OU1, OU7, and Areas 1, 2, and 3 of OU5. None are in place for Area 6 OU5 at this time.
  - Fish passage installation required. Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.

- Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
- May also still cause sediment transport issues.
- Public disapproval of this option due to its socioeconomic and recreational impact.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent.

Decommissioning (Full)



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and DO).
  - Eliminates sediment transport issues

- Cons/Risks
    - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
    - Public disapproval of this option due to its socioeconomic and recreational impact.
    - Potential for contaminated sediment removal and transport which will create a significant cost burden.
    - Barrier system should be installed to prevent upstream migration of invasive species (sea lamprey and round goby); refer to FishPass System example by Great Lakes Fishery Commission.

License Surrendering (Non-Power Operation)

- Pros
    - Lower initial cost burden
    - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
    - Fish passage would not be addressed directly but requires installation of fish passage system; potential discontinuation of MDNR stocking.
    - Contaminated sediments do not need to be removed and transported offsite.
- Cons/Risks
    - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
        - Future repairs to dam structure.
    - Potential fish passage requirements.
    - Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405. Upwelling system installation may add cost burden.
    - Transport of sediment and woody debris is also not improved through this option.

Divesting

Relicensing decision is further out than the Au Sable, Manistee, and Muskegon River projects. Putting this project on the market as part of a large portfolio is a near term action that can inform the next decisions. There is time before having to make a decision on relicensing or surrender.

A-2 CALKINS BRIDGE HYDROELECTRIC DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Non Power Operation

Category	Scope Item	Unit	WSP Unit Cost Opinion	Quantity	WSP Opinion of Cost
Utility Separation	Leave powerhouse intact	LS	$ 338,549.00	1	$ 338,549.00
Decommissioning and Demolition	Remove or lay up equipment	LS	$ 88,558.00	1	$ 88,558.00
	Modify spillway to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558.00
Environmental and Restoration	Fish Passage	VLF	$ 50,000.00	19	$ 950,000.00
	Subtotal				**$1,465,665**
Contingency	Contingency				$146,567
Project Indirect	Owner's Cost				$219,850
	Baseline Studies, Engineering and Permitting				$869,078
	Construction Management				$146,567
	Total				**$2,847,727**

Notes:

1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

A-3 CALKINS BRIDGE HYDROELECTRIC DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost Opinion	Quantity	WSP Opinion of Cost
	Remove Substation	LS	$ 36,114.00	1.00	$ 36,114.00
Utility separation	Remove lines from plant to substation	LF	$ 71.00	50.00	$ 3,550.00
	Remove security fencing	LF	$ 2.36	500.00	$ 1,180.00
	Remove septic tank/drain field	LS	$ 11,808.00	1.00	$ 11,808.00
	Removal of right downstream sheet pile wall	SF	$ 2.36	3200.00	$ 7,552.00
	Remove piezometers	Each	$ 2,362.00	6.00	$ 14,172.00
	Remove all powerhouse equipment	LS	$ 218,548.00	1.00	$ 218,548.00
	Demolish and remove concrete/masonry	CY	$ 207.00	3453.00	$ 714,771.00
	Remove trash racks	TON	$ 265.00	24.00	$ 6,360.00
	Remove gates-Powerhouse	TON	$ 265.00	15.00	$ 3,975.00
	Remove sheet pile-Powerhouse	SF	$ 40.00	3350.00	$ 134,000.00
	Demolish and remove concrete	CY	$ 207.00	1560.00	$ 322,920.00
	Remove gates-Spillway	TON	$ 265.00	45.00	$ 11,925.00
	Remove gate hoist	TON	$ 265.00	17.00	$ 4,505.00
	Remove rails	TON	$ 265.00	1.50	$ 398.00
	Remove sheet pile-Spillway	SF	$ 2.36	7200.00	$ 16,992.00
	Drain Reservoir	LS	$ 932,103.00	1.00	$ 932,103.00
Decommissioning	Remove accumulated non-contaminated sediments	CY	$ 7.09	188976.59	$ 1,339,845.00
and Demolition	Remove portion of earth dam to create sufficient breach	CY	$ 14.64	1090.00	$ 15,958.00
Abatement &	Remove contaminated soil(Superfund Site)	CY	$ 7.09	1098886.00	$ 7,791,102.00
Regulated Material	Disposal of contaminated soil	TON	$ 70.00	1897006.90	$ 132,790,484.00
	New bridge	LS	$ 4,327,480.00	1.00	$ 4,327,480.00
	Roadway reconstruction	LS	$ 89,160.00	1.00	$ 89,160.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	190066.59	$ 1,520,533.00
	Grading & surface preparation/amendments	ACRE	$ 6,700.00	828.00	$ 5,547,600.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	7407.41	$ 1,111,112.00
	Seed former reservoir bottom	ACRE	$ 3,100.00	828.00	$ 2,566,800.00
	Plant former reservoir bottom	ACRE	$ 3,072.00	828.00	$ 2,543,616.00
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	28000.00	$ 140,000.00
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000.00	$ 750,000.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	8429.40	$ 2,809,772.00
	Bank Stabilization - Live stakes and Jute Matting	LF	$ 54.53	47766.60	$ 2,604,713.00
Environmental and	Concrete weir installation	LF	$ 5,050.00	200.00	$ 1,010,000.00
Restoration	Fish Passage	VLF	$ 50,000.00	9.00	$ 450,000.00
	Subtotal				**$ 169,849,048.00**
	Owner's Cost				$ 5,558,785
	Baseline Studies, Engineering and Permitting				$ 1,697,050
Project Indirect	Construction Management, Biological Monitoring & O&M				$ 741,171
	Contingency				$ 16,984,905
	Total				**$ 194,830,959**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.
2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.
3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions
4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

A-4 CALKINS BRIDGE HYDROELECTRIC DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Calkins Bridge
Decommissioning Cost Evaluation - Complete Removal

Category	Cost Activity	Unit	WSP Unit Cost Opinion	Quantity	WSP Opinion of Cost
	Remove Substation	LS	$ 36,114.00	1.00	$ 36,114
Utility separation	Remove lines from plant to substation	LF	$ 71.00	50.00	$ 3,550
	Remove security fencing	LF	$ 2.36	500.00	$ 1,180
	Remove septic tank/drain field	LS	$ 11,808.00	1.00	$ 11,808
	Removal of right downstream sheet pile wall	SF	$ 2.36	3200.00	$ 7,552
	Remove piezometers	Each	$ 2,362.00	6.00	$ 14,172
	Remove all powerhouse equipment	LS	$ 218,548.00	1.00	$ 218,548
	Demolish and remove concrete/masonry	CY	$ 207.00	3453.00	$ 714,771
	Remove trash racks	TON	$ 265.00	24.00	$ 6,360
	Remove gates-Powerhouse	TON	$ 265.00	15.00	$ 3,975
	Remove sheet pile-Powerhouse	SF	$ 40.00	3350.00	$ 134,000
	Demolish and remove concrete	CY	$ 207.00	1560.00	$ 322,920
	Remove gates-Spillway	TON	$ 265.00	45.00	$ 11,925
	Remove gate hoist	TON	$ 265.00	17.00	$ 4,505
	Remove rails	TON	$ 265.00	2.00	$ 530
	Remove sheet pile-Spillway	SF	$ 2.36	7200.00	$ 16,992
	Drain Reservoir	LS	$ 932,103.00	1.00	$ 932,103
	Remove earth dam	CY	$ 14.64	21450.00	$ 314,028
Decommissioning and Demolition	Remove accumulated non-contaminated sediments	CY	$ 7.09	262623.74	$ 1,862,002
Abatement & Regulated Material Removal	Remove contaminated soil(Superfund Site)	CY	$ 7.09	1098886.00	$ 7,791,102
	Disposal of contaminated soil	TON	$ 70.00	1897006.90	$ 132,790,483
	New bridge	LS	$ 4,327,480.00	1.00	$ 4,327,480
	Roadway reconstruction	LS	$ 89,160.00	1.00	$ 89,160
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	284073.74	$ 2,272,590
	Grading & surface preparation/amendments	ACRE	$ 6,700.00	1541.00	$ 10,324,700
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	7407.41	$ 1,111,111
	Seed former reservoir bottom	ACRE	$ 3,100.00	1541.00	$ 4,777,100
	Plant former reservoir bottom	ACRE	$ 3,072.00	1541.00	$ 4,733,952
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	28000.00	$ 140,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000.00	$ 750,000
	Bank Stabilization - Hard Structure	LF	$ 333.33	11737.80	$ 3,912,561
Environmental and Restoration	Bank Stabilization - Live stakes and Jute Matting	LF	$ 54.53	66514.20	$ 3,627,019
	Subtotal				**$ 181,264,293**
	Owner's Cost				$ 7,271,072
	Baseline Studies, Engineering and Permitting				$ 1,696,583
Project Indirect	Construction Management, Biological Monitoring & O&M				$ 969,476
	Contingency				$ 18,126,429
	Total				**$ 209,327,853**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions

CONSUMERS ENERGY COMPANY

MANISTEE RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE



Hodenpyl Hydroelectric Project (FERC No. 2599)



Tippy Hydroelectric Project (FERC No. 2580)

NOVEMBER 2024; REVISED OCTOBER 2025

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MANISTEE RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE

CONSUMERS ENERGY COMPANY

PROJECT NO.: US0038224.9874
DATE: OCTOBER 2025

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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 3

2.1 Hodenpyl Dam 3

2.2 Tippy Dam 4

3 STUDY APPROACH 5

3.1 Assumptions 5

3.2 Limitations 5

4 COST ESTIMATE SUMMARY 7

4.1 Class Estimates 7

4.1.1 Class 5 Estimate 7

4.2 Cost Estimate Summaries 7

4.2.1 Quantities and Unit Costs 7

4.2.2 Uncertainty Areas 7

4.2.3 Hodenpyl Dam Cost Estimate Activities 8

4.2.4 Tippy Dam Cost Estimate Activities 14

4.2.5 Cost Estimate Results Summary 21

BIBLIOGRAPHY 23

TABLES

FOR EACH TABLE 4.1 HODENPYL DAM COST ESTIMATE ACTIVITIES BY SCENARIO 8
TABLE 4.2 TIPPY DAM COST ESTIMATE ACTIVITIES BY SCENARIO 14
TABLE 4.4 HODENPYL DAM COST ESTIMATE RESULTS SUMMARY 21
TABLE 4.5 TIPPY DAM COST ESTIMATE RESULTS SUMMARY 22

APPENDICES

A HODENPYL DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 HODENPYL DAM SITE SUMMARY

A-2 HODENPYL DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

A-3 HODENPYL DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

A-4 HODENPYL DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B TIPPY DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

B-1 TIPPY DAM SITE SUMMARY

B-2 TIPPY DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

B-3 TIPPY DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B-4 TIPPY DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

1 EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets. To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

This report details the surrendering considerations and pricing considered in the roadmap for 2 of the 13 hydropower facilities located within the Manistee River Watershed, including the including Hodenpyl Dam in Wexford County, and Tippy Dam in Manistee County.

Three surrender scenarios with specific assumptions were considered in preparing the cost estimates for each surrender option:

1. Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
2. Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
3. Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

For each facility and scenario, a class 5 cost estimate was prepared in Q4 2022 dollars, identifying and quantifying the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental and restoration work of the Manistee River, as well as associated project indirect costs and recommended contingency. Schematics utilized for the evaluation of the Surrender and Decommission – Partial and Full Removal for how the upper reservoir may be reshaped in the decommissioning restoration are presented. Additional assumptions and limitations by site are presented herein.

2 INTRODUCTION

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added. This report details costs and considerations prepared for 2 of the 13 hydropower facilities located along the Manistee River system, including Hodenpyl Dam in Wexford County, and Tippy Dam in Manistee County.

The Manistee River system is in northwestern Michigan and incorporates 11 counties including Manistee, Wexford, Mason, Lake, Osceola, Grand Traverse, Missaukee, Kalkaska, Crawford, Otsego, and Antrim. The Manistee River watershed drains more than 1,780 square miles of land area, and over 100 tributaries flow directly into the mainstream.

The three surrendering scenarios include:

- Surrender – No-Power Generation
- Surrender and Decommission – Partial Removal
- Surrender and Decommission – Full Removal.

The objective of the conceptual decommissioning cost estimate is to identify the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental work, and restoration of the Manistee River, as well as associated project indirect costs and recommended contingencies.

2.1 HODENPYL DAM

The Hodenpyl dam (FERC Project Number P-2599), located in the Manistee River in Mesick, Wexford County, Michigan consists of two, 80-foot-high earth embankment dam sections, each with a concrete core wall and an emergency overflow spillway at the north end of the north embankment dam. The reservoir, with a normal surface area of 1,798 acres at elevation 809.0 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 39,684 acre-feet.

Additionally, the dam includes a concrete and masonry powerhouse containing two generating units with a total installed capacity of 13,884 kW, and a 157-foot-long concrete apron with retaining walls in the tailrace. The powerhouse also contains two spill tubes used primarily as the service spillway.

2.2 TIPPY DAM

The Tippy dam (FERC Project Number P-2580), located in the Manistee River in Brethren, Manistee County, Michigan consists of two, 83-foot-high earth embankment dam sections. The dam includes an 83-foot-high concrete service spillway with four steel radial gates and a concrete-lined discharge channel extending approximately 240 feet downstream that includes a 24-foot-high concrete weir approximately 85 feet downstream of the radial gates.

Additionally, the dam includes a reservoir with a normal surface area of 1,330 acres at 687.4 feet (USGS datum) with a gross storage of 27,620 acre-feet, a concrete and concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 14,255 kilowatts (kW), and a 170-foot-long concrete-lined tailrace with retaining walls and downstream weir.

3 STUDY APPROACH

3.1 ASSUMPTIONS

WSP analyzed the costs for three scenarios involving the surrender of the hydropower facilities before the current license expires. These scenarios include 1) Surrender – No-Power Generation: 2) Surrender and Decommission – Partial Removal; and 3) Surrender and Decommission – Full removal. Detailed description of these alternatives are as follows:

Surrender – No Power Generation Operation

The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.

Surrender and Decommission - Partial Removal

The partial removal scenario evaluates the partial removal of the dam by reducing the earthen dam structure while fully removing the powerhouse and generation facilities. This reduction would create a sufficient breach to pass the 100-year flood through the reestablished river channel, ensuring that the incremental rise at the dam site would be less than 0.10 foot. This scenario also considers the potential to maintain some form of upstream reservoir system while developing a new weir control structure.

This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated.

Schematics for the partial removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through B.

Surrender and Decommission - Full Removal

The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities, earthen dam, concrete spillway, tailrace and retaining structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions. To minimize the transport and improve stabilization of the sediment within the reservoir, the reservoir would be drawn down in a controlled manner. Hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly.

Schematics for the full removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through B.

3.2 LIMITATIONS

- Prior costs provided by Consumers for these scenarios and developed Mead & Hunt (M&H) in 2021 were used as the foundation of these estimates. Sequencing of work follows the descriptions as detailed by M&H with additional measures incorporated following removal as part of the reservoir restoration. Estimates were supplemented and expanded based on similar experiences from other applicable dam removal projects.
- Information related to sediment volumes and characterization are estimated and assumed based on watershed research for potential hazardous contamination. As no data is available at this time, there is significant risk associated with the uncertainty to the volumes and level of contamination for management. Unless

documentation of known hazardous spills were identified for the watershed, it was considered as a mix of non-contaminated and contaminated non-hazardous sediments for removal and disposal, as detailed herein. Sediment investigations would occur after a decision to surrender and decommission were approved.

- These estimates are based on Q4 2022 dollars at the time of preparation.
- Cost estimates, by nature, are as best as the information available at the time of preparation. Estimates should be reconsidered and updated as new information is obtained and as market conditions change.
- Additional assumptions and limitations considered for each cost item to derive the presented unit pricing and quantity are detailed herein.

4 COST ESTIMATE SUMMARY

4.1 CLASS ESTIMATES

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, costs accuracy is generally assumed to increase as project development nears completion. As such construction stage cost estimates are necessarily considered the most accurate and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE). The level of information or considerations prepared for this independent evaluation, with limitations, would be considered as Class 5 estimate per AACE.

4.1.1 CLASS 5 ESTIMATE

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its accuracy ranges -50% on the low side and +100%on the high side.

Class 5 cost estimate accuracy range: -50% to +100%

Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

4.2 COST ESTIMATE SUMMARIES

Costs for each surrender scenario were calculated for (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. Detailed descriptions for each item under each scenario are provided below.

All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (4th Quarter 2022 levels). The conceptual decommissioning cost estimates for each scenario by dam location are included in Appendix A through B.

4.2.1 QUANTITIES AND UNIT COSTS

Quantities of pieces of equipment and/or bulk material commodities used in the cost estimates were intended to be reasonable and representative of projects of this type. Material quantities were prepared by M&H in 2021 for categorial items included within their estimate. As appropriate, WSP simplified unit measurements and unit pricing for subject activities. For additional activity items incorporated by WSP, quantities were estimated from the schematic renderings prepared for each site and included within Appendix A through B, as detailed below. Upon determining corrective unit quantities and unit costs, cost components for each activity were determined by the multiplication of the unit quantity by unit cost, rounded to the nearest whole dollar.

4.2.2 UNCERTAINTY AREAS

This estimate will be based on similar experiences from other projects. Therefore, some specific information about each site is unknown. Additional studies would be needed to determine physical and chemical characteristics of soils and

sediments, potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures, type of vegetation and presence of non-native species, archaeological resources and historic structures, hydrology and hydraulic characteristics, as well as ecology and biology upstream and downstream of the structures.

4.2.3 HODENPYL DAM COST ESTIMATE ACTIVITIES

Table 4.1 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.1 Hodenpyl Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Replace 46/138-kV Substation		X	X
	Remove Power Lines Between Powerhouse and Substation		X	X
	Leave Powerhouse Intact	X		
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Downstream Soil Nail Wall			X
	Remove Piezometers		X	X
	Remove or Lay-Up Equipment	X		
	Remove All Powerhouse Equipment		X	X
	Modify Spillway to Maintain Flow/Pond Level	X		
	Remove Garage		X	X
	Demolish and Remove Concrete/Masonry		X	X
	Remove Trash Racks		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Valves		X	X
	Remove Sheet Piling		X	X
	Remove Intake Wall/Walkway		X	X
	Remove Hoist Rail		X	X
	Remove gates		X	X
	Drain 1,798-acre reservoir		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal		X	X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
Environmental and Restoration	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Bank Stabilization - Hard Structure		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Replace 46/138kV Substation

Lump sum cost was taken from the M&H cost estimate for replacement of the 46/138-kV Hodenpyl substation. The partial and full removal options assume that the Hodenpyl Plant would be replaced to keeping the electrical requirements intact.

Remove Power Lines Between Powerhouse and Substation

Linear footage and price per linear foot was taken from the M&H. Work includes removal of the power lines between the powerhouse and substation as part of the partial and full removal scenarios.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 635-station of the access road to be removed with the remaining left to provide access to the 138-kV corridor.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Downstream Soil Nail Wall

Cubic yard unit price was taken from the M&H estimate. For full removal this will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 35 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove or Lay-Up Equipment

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance would be decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons ("CFCs") and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove all Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. Under the partial and full removal options, all the plant electromechanical equipment, controls, protection, and station transformers would be removed from the powerhouse during its demolition and transported to an off-site disposal area.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Remove Garage

Lump sum cost was taken from the M&H estimate. Under the partial and full removal options, garage would be removed during decommissioning and transported to an off-site disposal area.

Demolish and Remove Concrete/Masonry

Cubic yard unit price was taken from the M&H estimate. Under the partial and full removal options, concrete/masonry would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Racks

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Remove Valves

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, valves would be removed during decommissioning and transported to an off-site disposal area.

Remove Sheet Piling

Provided as a cost per square foot was taken from the M&H estimate. Under the partial and full removal options, sheet piling would be removed from during decommissioning and transported to an off-site disposal area.

Remove Intake Wall/Walkway

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, wall/walkways would be removed during decommissioning and transported to an off-site disposal area.

Remove Hoist Rail

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, hoist rails would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Drain 1,798-Acre Reservoir

Lump sum cost provided was taken from the M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse during removal of the powerhouse structure, intake tower, penstocks, and a section of the embankment dam. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Once these elements of the project have been removed, the embankment dam would be breached sufficiently to allow the 100-year-flood flow to pass through the natural river channel located to the right of the powerhouse structure.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Provided as a cost per cubic yard was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Provided as a cost per square foot was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Manistee River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Manistee River, as well as both banks for all tributary lengths.

Channel Creation - Riffle Section at Downstream Tie In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 300-feet-wide, 1,000-feet-long, and 2-feet-deep for the full removal while only 500-feet-long for the partial removal. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 95-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 9-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Owner's Cost

An owner's cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $452,241 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.4 TIPPY DAM COST ESTIMATE ACTIVITIES

Table 4.2 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.2 Tippy Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Leave Powerhouse Intact		X	X
	Remove Buried Lines Between Powerhouse and MTB No. 2		X	X
	Move Distribution Line from Plant Bus	X		
	Remove Security Fencing		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Remove Office Building	X	X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove or Lay-Up Equipment		X	X
	Remove All Powerhouse Equipment		X	X
	Remove Precast Stoplogs		X	X
	Demolish & Remove Concrete/Masonry		X	X
	Remove Trash Racks		X	X
	Excavate/Dispose Earth Fill		X	X
	Remove Downstream Sheet Pile Weir	X		
	Remove or Lay-up Equipment	X		
	Modify Spillway to Maintain Flow/Pond Level		X	X
	Remove Gates		X	X
	Demolish & Remove Concrete		X	X
	Remove Gates		X	X
	Remove Hoists and Fixtures		X	X
	Excavate/Dispose Earth Fill		X	X
	Drain 1,330-Acre Reservoir		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish/Remove Entire Earth Dam and Core Wall - Excavation		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal		X	X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
Environmental and Restoration	Reuse(grading) of non-contaminated excavated and dredged material		X	X
	Grading and surface preparation/amendments		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Apply Erosion Control Measures: Silt Fence		X	X
	Apply Erosion Control Measures: Rip Rap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live stakes and Jute Matting		X	X
	Channel creation - riffle section at downstream tie-in		X	X
	Concrete weir installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Project Indirect	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Overhead Lines Between Powerhouse and MTB No. 2

Linear footage and price per linear foot was taken from the M&H. Work includes removal of the overhead lines between the powerhouse and MTB No. 2 as part of the partial and full removal scenarios.

Move Distribution Line from Plant Bus

Linear footage and price per linear foot was taken from the M&H. Under the partial and full removal, the distribution lines would no longer be required and removed entirely. Under the no-power generation scenario, electricity for the spillway operations would be required and services left in place to the plant for operation and maintenance of the plant.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H estimate. Scope of work outlined by M&H for the no-power generation scenario includes addressing public safety and environmental concerns to leave the powerhouse in place. This includes installation of precast concrete stoplogs in the power intake and draft tube exits to isolate the powerhouse water conduits following electromechanical equipment removal. Once isolated from reservoir and tailrace, the power conduits would be filled with sand up to the generator gallery floor.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Office Building

Lump sum cost was taken from the M&H estimate. The onsite office building will be demolished and disposed of offsite for all three scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 600 feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 11 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove All Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. For the partial and full removal scenarios, all the powerhouse equipment related to the generation of electricity would be decommissioned and disposed of offsite.

Remove Precast Stoplogs

Cubic yard unit price was taken from the M&H estimate. For the partial and full removal scenarios, all the precast stoplogs related to the generation of electricity would be decommissioned and disposed of offsite.

Demolish and Remove Concrete/Masonry

Cubic yard unit price was taken from the M&H estimate. Under the partial and full removal options, concrete/masonry would be removed during decommissioning and transported to an off-site disposal area.

Remove Trash Racks

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, trash racks would be removed during decommissioning and transported to an off-site disposal area.

Excavate / Dispose Earth Fill

Cubic yard unit price was taken from the M&H estimate. Under the partial and full removal options, earth fill would be removed during decommissioning and transported to an off-site disposal area.

Remove Downstream Sheet Pile Weir

Provided as a cost per square foot was taken from the M&H estimate. Under the partial and full removal options, sheet pile weir would be removed during decommissioning and transported to an off-site disposal area.

Remove or Lay-Up Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the turbine-generator with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Remove Gates

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Demolish and Remove Concrete

Cubic yard unit price was taken from the M&H estimate. Under the partial and full removal options, concrete would be removed during decommissioning and transported to an off-site disposal area.

Remove Gates

Provided as a price per ton was taken from the M&H estimate. Under the partial and full removal options, gates would be removed during decommissioning and transported to an off-site disposal area.

Drain 1,330-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. This activity accounts for the sheet pile cutoff, in which all of the sheet pile wall as part of the core wall will be removed and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the Manistee River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation / Amendments

WSP added cost for grading and surface preparation / amendments onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 300-foot-length is considered upstream of the revised water impounded area. For the full removal, a 600-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Manistee River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Manistee River, as well as both banks for all tributary lengths.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner’s cost of 15% of the construction subtotal was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $373,419 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.5 COST ESTIMATE RESULTS SUMMARY

The full conceptual decommissioning cost estimate for each dam site and scenario are provided in Appendix A through B. Tables 4.4 to Table 4.5 provide a summary of total cost by category for Hodenpyl and Tippy dams, respectively.

Table 4.3 Hodenpyl Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	$94,463	$3,210,577	$3,210,577
Decommissioning and Demolition	$176,946	$38,686,545	$61,514,165
Salvage	-	$(57,430)	$(57,430)
Environmental and Restoration	$3,950,000	$62,413,804	$85,135,883
Subtotal	**$4,221,409**	**$104,253,496**	**$149,803,195**
Project Indirect	$2,060,344	$21,771,968	$30,709,656
Contingency Cost	$422,141	$10,425,350	$14,980,320
Total Project Cost	**$6,703,894**	**$136,450,814**	**$195,493,171**

Table 4.4 Tippy Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	$247,575	$220,139	$220,100
Decommissioning and Demolition	$271,578	$28,148,861	$29,773,425
Environmental and Restoration	$3,450,000	$40,208,513	$43,761,145
Subtotal	**$3,969,153**	**$68,577,513**	**$73,754,670**
Project Indirect	$1,909,629	$14,458,391	$15,119,709
Contingency Cost	$396,916	$6,857,752	$7,375,467
Total Project Cost	**$6,275,698**	**$89,893,656**	**$96,249,846**

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— Mead & Hunt. 2021. Hydroelectric Plant Retirement Study. Manistee River Hydroelectric Projects.

APPENDIX

A HODENPYL DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

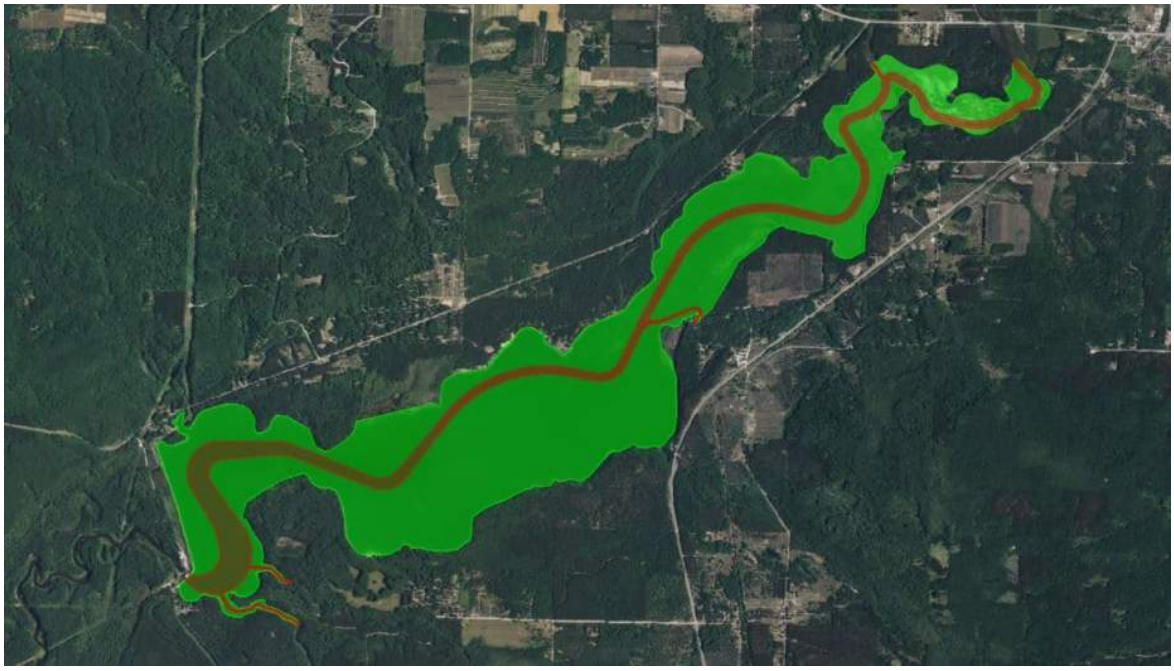
A-1 HODENPYL DAM SITE SUMMARY

Site Characteristics

- Two, 80-foot-high earth embankment dam sections, each with a concrete core wall.
- An emergency overflow spillway at the north end of the north embankment dam.
- A reservoir with a normal surface area of 1,798 acres at elevation 809.0 feet (USGS datum) and a gross storage of 39,684 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 13,884 kW.
- A 157-foot-long concrete tailrace with retaining walls.
- Associated appurtenant structures



Surrendering – Partial Decommissioning

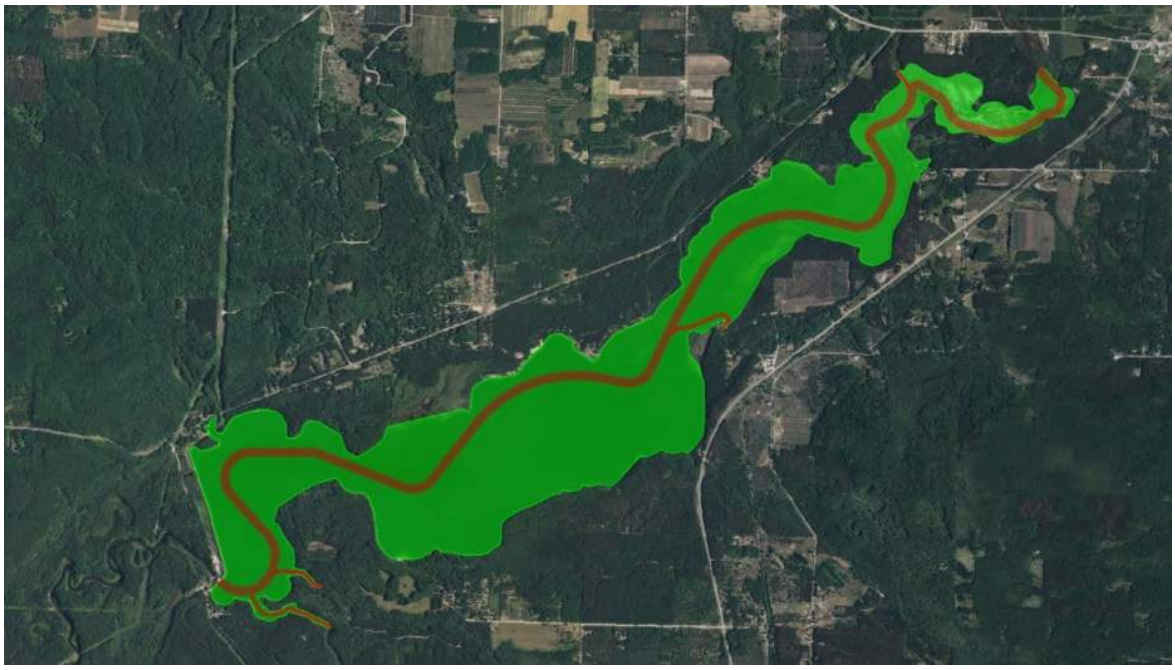


- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - Section 7 of the Endangered Species Act requires consultation with Fish & Wildlife Service, which may require other associated studies will be required because the Manistee River downstream of Tippy Dam is designated as a National Wild and Scenic River.
  - Features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Water quality (temperature and potentially dissolved oxygen (DO)) may still be out of compliance for cold water fisheries under License Article 405.
  - May also still cause sediment transport issues.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its

failure may cause damage limited to agriculture, uninhabited buildings, structures, or township or county roads, where environmental degradation would be minimal, and where danger to individuals is slight or nonexistent. This opinion is based on the following considerations:

- Manistee River trail suspension bridge approximately 2,200 FT downstream of dam
- Transmission line monopoles on either side of bank 2,500 FT downstream of dam (likely at high enough elevation to be out of damage risk area)
- Upper River Road boat launch along right bank approximately 3,400 FT downstream of dam
- N Coates Highway bridge >6 miles downstream of dam
- Upper River Road runs along right bank, but no structures nor inhabited homes on either side of downstream banks.
-

Surrendering – Full Decommissioning



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Fish passage opened without installing a fish passage system (discontinuation of MDNR stocking).
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.

    - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potentially DO).
    - Recent letters filed with FERC allege the discharge from Hodenpyl Dam violates the 1992 Federal Energy Regulatory Commissions Settlement Agreement for temperature. Options to lower water temperatures are recommended to improve natural reproduction and recruitment of salmon populations, improve water quality, and reduce reliance on hatchery stocking. Currently the system is not self-sustaining as the Hodenpyl Dam is out of compliance more than half the time during June through September and 70% of the time over the entire year. Sections of the river upstream of Hodenpyl Dam have been evaluated for potential Arctic grayling reintroduction, current dam operation would negatively impact that.
  - Eliminates sediment transport issues
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Public disapproval of this option due to its socioeconomic and recreational impact.

A-2 HODENPYL DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation - Non-Power Operation

Category	Cost Activity	WSP Unit Cost	Unit	Quantity	WSP Opinion of Cost
Utility Separation	Leave powerhouse intact	$ 94,463.00	LS	1	$ 94,463
Decommissioning and Demolition	Remove or lay up equipment	$ 88,384.00	LS	1	$ 88,384
	Modify spillway to maintain flow/pond level	$ 56.77	CY	1560	$ 88,562
Environmental and Restoration	Installation of fish passage	$ 50,000.00	VLF	79	$ 3,950,000
	Subtotal				**$ 4,221,409**
Project Indirect	Owner's Cost				$ 633,212
	Engineering and Permitting				$ 1,004,991
	Construction Management				$ 422,141
Contingency	Contingency				$ 422,141
Total Project Costs	**Total**				**$ 6,703,894**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

A-3 HODENPYL DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	WSP Unit Cost	Unit	Quantity	WSP Opinion of Cost
Utility Separation	Replace 46/138kV substation	$ 3,182,177.00	LS	1	$ 3,182,177
	Remove power lines between powerhouse and substation	$ 71.00	LF	400	$ 28,400
Decommissioning and Demolition	Remove security fencing	$ 2.36	LF	9000	$ 21,240
	Remove plant access road	$ 590.00	LF	55	$ 32,450
	Remove septic tank/drain field	$ 11,808.00	LS	1	$ 11,808
	Remove piezometers	$ 2,362.00	EACH	35	$ 82,670
	Remove all powerhouse equipment	$ 339,686.00	LS	1	$ 339,686
	Remove garage	$ 7,223.00	LS	1	$ 7,223
	Demolish and remove concrete/masonry	$ 207.00	CY	28910	$ 5,984,370
	Remove trash racks	$ 314.00	TON	20	$ 6,280
	Remove valves	$ 314.00	TON	4	$ 1,256
	Remove sheet piling	$ 2.36	SF	25000	$ 59,000
	Remove intake wall/walkway	$ 314.00	TON	11	$ 3,454
	Remove hoist rail	$ 314.00	TON	4	$ 1,256
	Remove gates	$ 314.00	TON	50	$ 15,700
	Drain 1,798-acre reservoir	$ 617,725.00	LS	1	$ 617,725
	Excavate/dispose earth fill	$ 14.64	CY	204020	$ 2,986,853
	Reinforced concrete demolition	$ 207.00	CY	2734.08	$ 565,955
	Sheet piling removal	$ 2.36	SF	26967	$ 63,643
	Dam pilot channel	$ 8.00	CY	140741	$ 1,125,928
	Remove accumulated non-contaminated sediments	$ 7.09	CY	3741028.75	$ 26,523,894
	Mobilization/demobilization	$ 236,154.00	LS	1	$ 236,154
Environmental and Restoration	Reuse(grading) of non-contaminated excavated and dredged material	$ 8.00	CY	4085789.75	$ 32,686,318
	Grading and surface preparation/amendments	$ 6,700.00	ACRE	1514	$ 10,143,800
	Seed former reservoir bottom	$ 3,100.00	ACRE	1514	$ 4,693,400
	Plant former reservoir bottom	$ 3,072.00	ACRE	1514	$ 4,651,008
	Apply Erosion Control Measures: Silt Fence	$ 5.00	LF	28000	$ 140,000
	Apply Erosion Control Measures: Rip Rap Protection	$ 150.00	CY	5000	$ 750,000
	Bank Stabilization - Hard Structure	$ 333.33	LF	12896	$ 4,298,624
	Bank Stabilization - Live stakes and Jute Matting	$ 54.53	LF	51584	$ 2,812,876
	Channel creation - riffle section at downstream tie-in	$ 150.00	CY	5185.185185	$ 777,778
	Fish passage	$ 50,000.00	VLF	9	$ 450,000
	Concrete weir installation	$ 5,050.00	LF	200	$ 1,010,000
Salvage	Salvage value	$ (57,430.00)	LS	1	$ (57,430)
	Subtotal				**$ 104,253,496**
Project Indirect	Owner's Cost (15%)				$ 15,638,025
	Baseline Studies, Engineering and Permitting				$ 4,048,873
	Construction Management, Biological Monitoring & O&M				$ 2,085,070
Contingency Cost	Contingency (10%)				$ 10,425,350
Total Project Costs	**Total**				**$ 136,450,814**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

A-4 HODENPYL DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hodenpyl Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Replace 46/138kV substation	LS	$ 3,182,177.00	1	$ 3,182,177
	Remove power lines between powerhouse and substation	LF	$ 71.00	400	$ 28,400
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	9000	$ 21,240
	Remove plant access road	STA	$ 590.00	55	$ 32,450
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove downstream Soil Nail Wall	CY	$ 400.00	225	$ 90,000
	Remove piezometers	EACH	$ 2,362.00	35	$ 82,670
	Remove all powerhouse equipment	LS	$ 339,686.00	1	$ 339,686
	Remove garage	LS	$ 7,223.00	1	$ 7,223
	Demolish and remove concrete/masonry	CY	$ 207.00	28910	$ 5,984,370
	Remove trash racks	TON	$ 314.00	20	$ 6,280
	Remove valves	TON	$ 314.00	4	$ 1,256
	Remove sheet piling	SF	$ 2.36	25000	$ 59,000
	Remove intake wall/walkway	TON	$ 314.00	11	$ 3,454
	Remove hoist rail	TON	$ 314.00	4	$ 1,256
	Remove gates	TON	$ 314.00	50	$ 15,700
	Drain 1,798-acre reservoir	LS	$ 617,725.00	1	$ 617,725
	Excavate/dispose earth fill	CY	$ 14.64	765000	$ 11,199,600
	Reinforced concrete demolition	CY	$ 207.00	10240	$ 2,119,680
	Sheet piling removal	SF	$ 2.36	101000	$ 238,360
	Dam pilot channel	CY	$ 8.00	140741	$ 1,125,928
	Remove accumulated non-contaminated sediments	CY	$ 7.09	5545885	$ 39,320,325
	Mobilization/demobilization	LS	$ 118,077.00	2	$ 236,154
Environmental and Restoration	Reuse(grading) of non-contaminated excavated and dredged material	CY	$ 8.00	6451626	$ 51,613,008
	Grading and surface preparation/amendments	ACRE	$ 6,700.00	1581	$ 10,592,700
	Seed former reservoir bottom	ACRE	$ 3,100.00	1581	$ 4,901,100
	Plant former reservoir bottom	ACRE	$ 3,072.00	1581	$ 4,856,832
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	28000	$ 140,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000	$ 750,000
	Bank Stabilization - Hard Structure	LF	$ 333.33	18243	$ 6,080,873
	Bank Stabilization - Live stakes and Jute Matting	LF	$ 54.53	72971	$ 3,979,120
	Channel creation - riffle section at downstream tie-in	CY	$ 150.00	14815	$ 2,222,250
Salvage	Salvage value	LS	$ (57,430)	1	$ (57,430)
	Subtotal				**$ 149,803,195**
Project Indirect	Owner's Cost (15%)				$ 22,470,480
	Baseline Studies, Engineering and Permitting				$ 5,243,112
	Construction Management, Biological Monitoring & O&M				$ 2,996,064
Contingency Cost	Contingency (10%)				$ 14,980,320
Total Project Costs	**Total**				**$ 195,493,171**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

B TIPPY DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

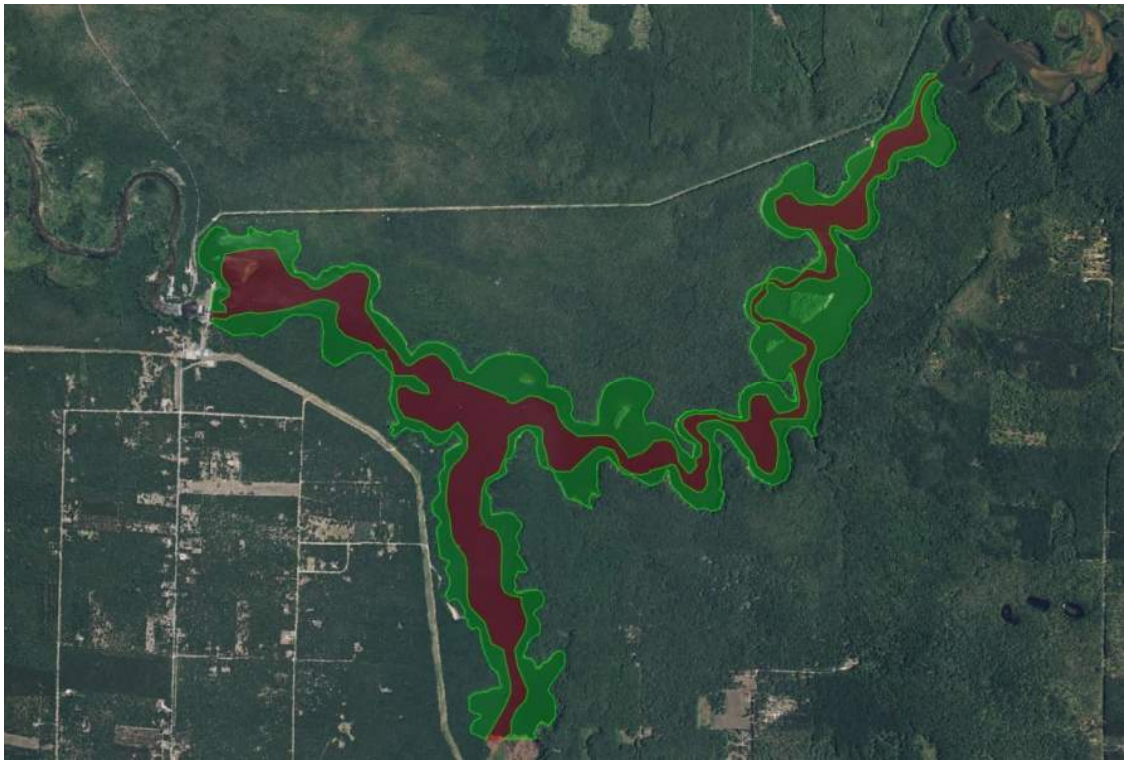
B-1 TIPPY DAM SITE SUMMARY

Site Characteristics

- Two, 83-foot-high earth embankment dam sections, each with a concrete core wall.
- An 83-foot-high concrete spillway with four steel radial gates and a concrete-lined discharge channel extending approximately 240 feet downstream that includes a 24-foot-high concrete weir approximately 85 feet downstream of the radial gates.
- A reservoir with a normal surface area of 1,330 acres at elevation 687.4 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 27,620 acre-feet.
- A concrete and masonry powerhouse containing three generating units with a total installed capacity of 14,255 kilowatts (kW).
- A 170-foot-long concrete-lined tailrace with retaining walls and downstream weir.
- Associated appurtenant structures.



Surrendering – Partial Decommissioning



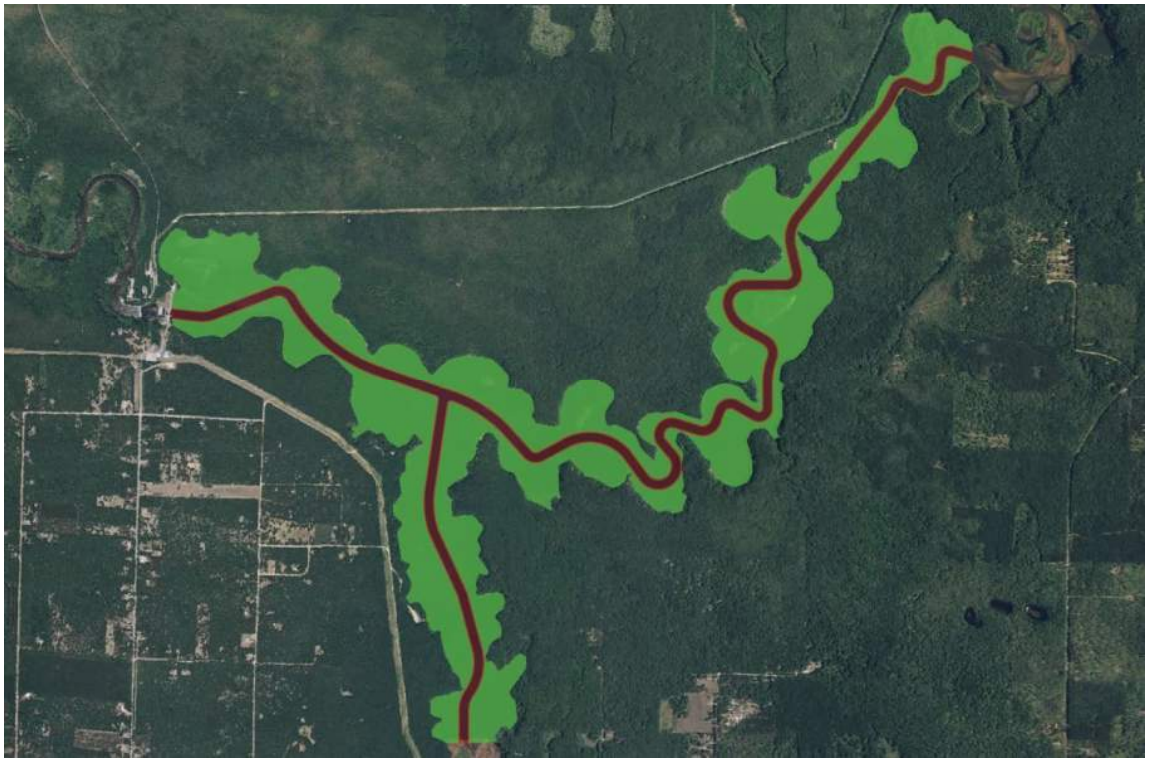
- Pros
  - The Tippy Dam is not currently meeting Article 405 discharge water temperature standards and has been determined to not be self-sustaining

- Cons/Risks
  - Tippy Dam is a barrier to invasive species traveling upstream from Lake Michigan.
  - Water quality (temperature and potentially dissolved oxygen (DO)) may still be out of compliance for cold water fisheries under License Article 405.
  - Tippy Dam has been identified as the only place in the upper Midwest where little brown bat populations have not been affected by White Nose Syndrome. It has not yet been determined why this is but any changes to the environment are highly discouraged. Researchers consider the site a valuable opportunity to determine why bat populations are protected there and studying it could lead to figuring out how to replicate conditions in areas that are affected. The powerhouse is a regionally important hibernacula to an estimated 10,000 little brown bats.
  - Fish passage system should be designed with consideration to allow desirable species (Lake Sturgeon) and prevent non-desirable species (Sea Lamprey) from upstream migration.
  - Tippy Dam is part of the Manistee River which is designated as a National Wild and Scenic River. A section 7 of the Endangered Species Act analysis is required

for any changes to ensure the free-flow, water quality, and Outstanding Remarkable Values of the rivers are maintained.

- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:
  - Tippy Dam Recreation Area < 500 FT downstream of dam
  - Tippy Dam Public Fishing Access 1,700 FT downstream of dam
  - 1 inhabited residential home >5 miles downstream of dam
  - N High Bridge Road Bridge >5.5 miles downstream of dam
  - Dilling Road runs along right bank for about first 4,000 FT downstream of dam

Surrendering – Full Decommissioning



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates issues of water quality (temperature and potentially DO).
  - Recent letters filed with FERC allege the discharge from Hodenpyl Dam violates the 1992 Federal Energy Regulatory Commissions Settlement Agreement for temperature. Options to lower water temperatures are recommended to improve natural reproduction and recruitment of salmon populations, improve water quality, and reduce reliance on hatchery stocking. Currently the system is not self-sustaining as the Tippy Dam is out of compliance more than half the time during June through September and 70% of the time over the entire year. Sections of the river upstream of Hodenpyl Dam have been evaluated for potential Arctic grayling reintroduction, current dam operation would negatively impact that.
  - Eliminates sediment transport issues

- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - Consideration of a barrier system to prevent upstream migration of invasive species (sea lamprey and round goby)

B-2 TIPPY DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Tippy Dam
Decommissioning Cost Evaluation - Non-Power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Leave powerhouse intact	LS	$ 247,575.00	1	$ 247,575
Decommissioning and Demolition	Remove office building	LS	$ 94,462.00	1	$ 94,462
	Remove or lay up equipment	LS	$ 88,558.00	1	$ 88,558
	Modify spillway to maintain flow/pond level	CY	$ 56.77	1560	$ 88,558
Environmental and Restoration	Installation of fish passage	VLF	$ 50,000.00	69	$ 3,450,000
	Subtotal				**$3,969,153**
Project Indirect	Owners Cost (15%)				$595,373
	Baseline Studies, Engineering and Permitting				$917,340
	Construction Management and Biological Monitoring				$396,916
Contingency	Contingency 10%				$396,916
Total Project Costs	**Total**				**$6,275,698**

Notes:

1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

B-3 TIPPY DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Tippy Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove buried lines between powerhouse and MTB No. 2	LF	$ 71.01	3000	$ 213,037
	Move distribution line from Plant Bus	LS	$ 7,102.00	1	$ 7,102
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	2000	$ 4,719
	Remove office building	LS	$ 94,462.00	1	$ 94,462
	Remove plant access road	LF	$ 5.90	400	$ 2,359
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808
	Remove piezometers	EACH	$ 2,361.82	11	$ 25,980
	Remove all powerhouse equipment	LS	$ 488,350.00	1	$ 488,350
	Remove precast stoplogs	CY	$ 650.05	85	$ 55,254
	Demolish and remove concrete/masonry	CY	$ 207.00	12620	$ 2,612,340
	Remove trash racks	TON	$ 331.05	20	$ 6,621
	Excavate/dispose earth fill	CY	$ 14.64	10500	$ 153,720
	Remove downstream sheet pile weir	SF	$ 2.36	7000	$ 16,520
	Remove gates	TON	$ 331.05	78	$ 25,822
	Demolish and remove concrete	CY	$ 207.00	17215	$ 3,563,505
	Remove gates	TON	$ 331.06	34	$ 11,256
	Remove hoists and fixtures	TON	$ 331.04	27	$ 8,938
	Excavate/dispose earth fill	CY	$ 14.64	3800	$ 55,632
	Drain Reservoir	LS	$ 1,335,637.00	1	$ 1,335,637
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation	CY	$ 14.64	81000	$ 1,185,840
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition	CY	$ 207.00	800	$ 165,600
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal	CY	$ 2.36	35000	$ 82,600
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel	CY	$ 7.09	139091	$ 986,156
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging	CY	$ 7.09	2400506	$ 17,019,588
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob	LS	$ 236,154.00	1	$ 236,154
Environmental and Restoration	Grading & surface preparation/amendments	ACRE	$ 6,700.00	620	$ 4,154,000
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2634897	$ 21,079,176
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	14815	$ 2,222,250
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	620	$ 1,922,000
	Habitat Restoration - Planting	ACRE	$ 3,072.00	620	$ 1,904,640
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	30000	$ 150,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000	$ 750,000
	Concrete weir installation	LF	$ 5,050.00	200	$ 1,010,000
	Fish Passage	VLF	$ 50,000.00	9	$ 450,000
	Bank Stabilization - Hard Structure	LF	$ 333.33	11908	$ 3,969,161
	Bank Stabilization - Live stakes and Jute Matting	LF	$ 54.53	47630	$ 2,597,286
	Subtotal				**$68,577,513**
Project Indirect	Owners Cost (15%)				$10,286,627
	Engineering and Permitting				$2,800,213
	Construction Management & Biological Monitoring				$1,371,551
Contingency Cost	Contingency (10%)				$6,857,752
Total Project Costs	**Total**				**$89,893,656**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

B-4 TIPPY DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Tippy Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove buried lines between powerhouse and MTB No. 2	LF	$ 71.00	3000	$ 213,000.00
	Move distribution line from Plant Bus	LS	$ 71.00	100	$ 7,100.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	2000	$ 4,720.00
	Remove office building	LS	$ 94,462.00	1	$ 94,462.00
	Remove plant access road	STA	$ 590.00	4	$ 2,360.00
	Remove septic tank/drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,362.00	11	$ 25,982.00
	Remove all powerhouse equipment	LS	$ 488,350.00	1	$ 488,350.00
	Remove precast stoplogs	CY	$ 650.05	85	$ 55,254.00
	Demolish and remove concrete/masonry	CY	$ 207.00	12620	$ 2,612,340.00
	Remove trash racks	TON	$ 331.05	20	$ 6,621.00
	Excavate/dispose earth fill	CY	$ 14.64	10500	$ 153,720.00
	Remove downstream sheet pile weir	SF	$ 2.36	7000	$ 16,520.00
	Remove gates	TON	$ 331.05	78	$ 25,822.00
	Demolish and remove concrete	CY	$ 207.00	17215	$ 3,563,505.00
	Remove gates	TON	$ 331.06	34	$ 11,256.00
	Remove hoists and fixtures	TON	$ 331.04	27	$ 8,938.00
	Excavate/dispose earth fill	CY	$ 14.64	3800	$ 55,632.00
	Drain Reservoir	LS	$ 1,335,637.00	1	$ 1,335,637.00
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation	CY	$ 14.64	175000	$ 2,562,000.00
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition	CY	$ 207.00	2000	$ 414,000.00
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal	CY	$ 2.36	35000	$ 82,600.00
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel	CY	$ 7.09	139091	$ 986,156.00
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging	CY	$ 7.09	2400506	$ 17,019,588.00
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob	LS	$ 236,154.00	1	$ 236,154.00
Environmental and Restoration	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2728897	$ 21,831,176.00
	Grading & surface preparation/amendments	ACRE	$ 6,700.00	951	$ 6,371,700.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	14815	$ 2,222,250.00
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	951	$ 2,948,100.00
	Habitat Restoration - Planting	ACRE	$ 3,072.00	951	$ 2,921,472.00
	Apply Erosion Control Measures: Silt Fence	LF	$ 5.00	30000	$ 150,000
	Apply Erosion Control Measures: Rip Rap Protection	CY	$ 150.00	5000	$ 750,000
	Bank Stabilization - Hard Structure	LF	$ 333.33	11908	$ 3,969,161.00
	Bank Stabilization - Live stakes and Jute Matting	LF	$ 54.53	47630	$ 2,597,286.00
	Subtotal				**$73,754,670**
Project Indirect	Owners Cost (15%)				$11,063,201
	Engineering and Permitting				$2,581,414
	Construction Management & Biological Monitoring				$1,475,094
Contingency Cost	Contingency (10%)				$7,375,467
Total Project Costs	**Total**				**$96,249,846**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

CONSUMERS ENERGY COMPANY

MUSKEGON RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE



Hardy Hydroelectric Project (FERC No. P-2452)



Rogers Hydroelectric Project (FERC No. P-2451)



Croton Hydroelectric Project (FERC No. P-2468)

OCTOBER 2024; REVISED OCTOBER 2025

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MUSKEGON RIVER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE

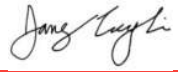
CONSUMERS ENERGY COMPANY

PROJECT NO.: US0038224.9874
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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 3

2.1 Hardy Dam 3

2.2 Rogers Dam 4

2.3 Croton Dam 4

3 STUDY APPROACH 5

3.1 Assumptions 5

3.2 Limitations 5

4 COST ESTIMATE SUMMARY 7

4.1 Class Estimates 7

4.1.1 Class 5 Estimate 7

4.2 Cost Estimate Summaries 7

4.2.1 Quantities and Unit Costs 7

4.2.2 Uncertainty Areas 8

4.2.3 Hardy Dam Cost Estimate Activities` 8

4.2.4 Rogers Dam Cost Estimate Activities 16

4.2.5 Croton Dam Cost Estimate Activities 24

4.2.6 Cost Estimate Results Summary 32

BIBLIOGRAPHY 35

TABLES

TABLE 4.1 HARDY DAM COST ESTIMATE ACTIVITIES BY SCENARIO 8
TABLE 4.2 ROGERS DAM COST ESTIMATE ACTIVITIES BY SCENARIO 16
TABLE 4.3 CROTON DAM COST ESTIMATE ACTIVITIES BY SCENARIO 24
TABLE 4.4 HARDY DAM COST ESTIMATE RESULTS SUMMARY 32
TABLE 4.5 ROGERS DAM COST ESTIMATE RESULTS SUMMARY 33
TABLE 4.6 CROTON DAM COST ESTIMATE RESULTS SUMMARY 34

APPENDICES

A HARDY DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 HARDY DAM SITE SUMMARY

A-2 HARDY DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

A-3 HARDY DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

A-4 HARDY DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B ROGERS DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

B-1 ROGERS DAM SITE SUMMARY

B-2 ROGERS DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

B-3 ROGERS DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

B-4 ROGERS DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

C CROTON DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

C-1 CROTON DAM SITE SUMMARY

C-2 CROTON DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

C-3 CROTON DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

C-4 CROTON DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

1 EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

This report details the surrendering considerations and pricing considered in the roadmap for 3 of the 13 hydropower facilities located within the Muskegon River Watershed, including the including Hardy and Croton Dams in Newago County, and Rogers Dam in Mecosta County.

Three surrender scenarios with specific assumptions were considered in preparing the cost estimates for each surrender option:

1. Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
2. Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
3. Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

For each facility and scenario, a class 5 cost estimate was prepared in Q4 2022 dollars, identifying and quantifying the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental and restoration work of the Muskegon River, as well as associated project indirect costs and recommended contingency. Schematics utilized for the evaluation of the Surrender and Decommission – Partial and Full Removal for how the reservoir may be reshaped in the decommissioning restoration are presented. Additional assumptions and limitations by site are presented herein.

2 INTRODUCTION

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added. This report details costs and considerations prepared for 3 of the 13 hydropower facilities located along the Muskegon River system, including Hardy and Croton Dams in Newago County, and Rogers Dam in Mecosta County.

The Muskegon River system is the second largest river system in Michigan. It is in north-central Michigan and incorporates 9 counties including Wexford, Roscommon, Missaukee, Clara, Osceola, Mecosta, Montcalm, Newaygo, and Muskegon. The Muskegon River watershed drains more than 2,700 square miles of land area, and approximately 94 tributaries flow directly into the mainstream.

The three surrendering scenarios include:

- Surrender – No-Power Generation
- Surrender and Decommission – Partial Removal
- Surrender and Decommission – Full Removal.

The objective of the conceptual decommissioning cost estimate is to identify the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental work, and restoration of the Muskegon River, as well as associated project indirect costs and recommended contingencies.

2.1 HARDY DAM

The Hardy dam (FERC Project Number 2452), located in the Muskegon River in Big Prairie Township, Newaygo County, Michigan consists of a 114-foot-high, 2,600-foot-long earth embankment dam section with a concrete core wall, a service spillway integral to the powerhouse, and a 600-foot-long fixed-crest auxiliary spillway with a concrete-lined (for the upper 880 feet) discharge channel. The reservoir, with a normal surface area of 3,902 acres at elevation 822.0 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 134,973 acre-feet with depths varying 70-100 feet within the channel that meanders through the impoundment.

Additionally, the dam includes a steel-framed concrete-and-masonry intake structure with upper and lower intake openings, three concrete penstocks to convey water from the lower intake opening to the intake tower, three steel-lined concrete penstocks to convey water from the intake tower to the powerhouse that includes a service spillway, a steel-framed concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 29,229 kW, and a 200-foot-long concrete apron with retaining walls in the tailrace.

2.2 ROGERS DAM

The Rogers dam (FERC Project Number 2451), located in the Muskegon River in Mecosta Township, Mecosta County, Michigan consists of 3 earth embankment dam sections (one section 48-feet-high and two sections 40-feet-high), each with a concrete core wall and totaling 600-feet-long. The dam includes a 40-foot-high, 156-foot-long concrete service spillway with six steel radial gates, a defunct log chute, and a concrete-lined discharge channel extending approximately 100 feet downstream.

Additionally, the dam includes a reservoir with a normal surface area of 449 acres at 861.6 feet (USGS datum) with a gross storage of 4,678 acre-feet, a concrete and concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 5,418 kilowatts (kW), and a 20-foot-long concrete apron with retaining walls in the powerhouse tailrace.

2.3 CROTON DAM

The Croton dam (FERC Project Number 2468), located in the Muskegon River in Croton Township, Newaygo County, Michigan consists of 2 earth embankment dam sections (one section 53-feet-high and one section 19-feet-high), each with a concrete core wall. It additionally includes a 53-foot-high and 240-foot-long concrete service spillway with eight steel radial gates, an overflow weir, and a concrete-lined discharge channel extending approximately 250 feet downstream with a 7-foot-high concrete weir located approximately 53 feet downstream. The dam maintains a reservoir with a normal surface area of 1,209 acres at elevation 722.0 feet (USGS datum) with a gross storage of 21,932 acre-feet, as well as concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 7,473 kW, and a 31-foot-long concrete apron with retaining walls in the tailrace.

3 STUDY APPROACH

3.1 ASSUMPTIONS

WSP analyzed the costs for three scenarios involving the surrender of the hydropower facilities before the current license expires. These scenarios include 1) Surrender – No-Power Generation: 2) Surrender and Decommission – Partial Removal; and 3) Surrender and Decommission – Full removal. Detailed description of these alternatives are as follows:

Surrender – No Power Generation Operation

The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.

Surrender and Decommission - Partial Removal

The partial removal scenario evaluates the partial removal of the dam by reducing the earthen dam structure while fully removing the powerhouse and generation facilities. This reduction would create a sufficient breach to pass the 100-year flood through the reestablished river channel, ensuring that the incremental rise at the dam site would be less than 0.10 foot. This scenario also considers the potential to maintain some form of upstream reservoir system while developing a new weir control structure.

This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated.

Schematics for the partial removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through C.

Surrender and Decommission - Full Removal

The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities, earthen dam, concrete spillway, tailrace and retaining structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions. To minimize the transport and improve stabilization of the sediment within the reservoir, the reservoir would be drawn down in a controlled manner. Hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly.

Schematics for the full removal scenario for the reservoir reservation for each dam structure are provided in their respective appendices of A through C.

3.2 LIMITATIONS

- Prior costs provided by Consumers for these scenarios and developed by Kiewit Corporation in 2022, as available, and Mead & Hunt (M&H) in 2021 were used as the foundation of these estimates. Sequencing of work follows the descriptions as detailed by M&H with additional measures incorporated following removal as part of the reservoir restoration. Estimates were supplemented and expanded based on similar experiences from other applicable dam removal projects.
- Information related to sediment volumes and characterization are estimated and assumed based on watershed research for potential hazardous contamination. As no data is available at this time, there is significant risk

associated with the uncertainty to the volumes and level of contamination for management. Unless documentation of known hazardous spills were identified for the watershed, it was considered as a mix of non-contaminated and contaminated non-hazardous sediments for removal and disposal, as detailed herein. Sediment investigations would occur after a decision to surrender and decommission were approved.

- These estimates are based on Q4 2022 dollars at the time of preparation.
- Cost estimates, by nature, are as best as the information available at the time of preparation. Estimates should be reconsidered and updated as new information is obtained and as market conditions change.
- Additional assumptions and limitations considered for each cost item to derive the presented unit pricing and quantity are detailed herein.

4 COST ESTIMATE SUMMARY

4.1 CLASS ESTIMATES

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, costs accuracy is generally assumed to increase as project development nears completion. As such construction stage cost estimates are necessarily considered the most accurate and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE). The level of information or considerations prepared for this independent evaluation, with limitations, would be considered as Class 5 estimate per AACE.

4.1.1 CLASS 5 ESTIMATE

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its accuracy ranges -50% on the low side and +100%on the high side.

Class 5 cost estimate accuracy range: -50% to +100%

Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

4.2 COST ESTIMATE SUMMARIES

Costs for each surrender scenario were calculated for (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. Detailed descriptions for each item under each scenario are provided below.

All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (4th Quarter 2022 levels) if prepared by WSP. Pricing evaluated and utilized by the previous studies are based on costs at the time of their preparation (e.g. 2021 and early 2022). No price escalation was applied due to proximity in date of preparation and class 5 level estimate being prepared. The conceptual decommissioning cost estimates for each scenario by dam location are included in Appendix A through C.

4.2.1 QUANTITIES AND UNIT COSTS

Quantities of pieces of equipment and/or bulk material commodities used in the cost estimates were intended to be reasonable and representative of projects of this type. Material quantities were prepared by M&H in 2021 for categorial items included within their estimate. As appropriate, WSP simplified unit measurements and unit pricing for subject activities. For additional activity items incorporated by WSP, quantities were estimated from the schematic renderings prepared for each site and included within Appendix A through C, as detailed below. Upon determining corrective unit quantities and unit costs, cost components for each activity were determined by the multiplication of the unit quantity by unit cost, rounded to the nearest whole dollar.

4.2.2 UNCERTAINTY AREAS

This estimate will be based on similar experiences from other projects. Therefore, some specific information about each site is unknown. Additional studies would be needed to determine physical and chemical characteristics of soils and sediments, potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures, type of vegetation and presence of non-native species, archaeological resources and historic structures, hydrology and hydraulic characteristics, as well as ecology and biology upstream and downstream of the structures.

4.2.3 HARDY DAM COST ESTIMATE ACTIVITIES`

Table 4.1 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.1 Hardy Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Transformer & Lines from Powerhouse to 138-kV		X	X
	Leave Powerhouse Intact	X		
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Demolish & Remove Intake Structure and Footbridge		X	X
	Remove or Lay-Up Equipment	X		
	Remove All Powerhouse Equipment		X	X
	Demolish & Remove Powerhouse Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons		X	X
	Modify Spillway to Maintain Flow/Pond Level	X		
	Demolish and Remove Auxiliary Spillway			X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Drain 3,902-Acre Reservoir		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
Abatement and Regulated Material Removal	Remove Contaminated Sediments - Removal		X	X
	Remove Contaminated Sediments - Disposal		X	X
Salvage	Salvage		X	X
Environmental and Restoration	Reconstruct Roadway - Road		X	X
	Reconstruct Roadway - Bridge		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Transformer & Lines from Powerhouse to 138-kV

Lump sum cost was taken from the M&H cost estimate for removal of the transformer and lines to the 138-kV Croton line. The partial and full removal options assume that the Hardy Plant would be demolished and therefore, electricity would no longer be required.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 635-station of the access road to be removed with the remaining left to provide access to the 138-kV corridor.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 73 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Demolish & Remove Intake Structure and Footbridge

Lump sum cost was taken from the M&H cost estimate. Under the partial and complete removal options, the intake structure and footbridge would be demolished, and material removed to an off-site disposal area.

Remove or Lay-Up Equipment

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance would be decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons ("CFCs") and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove all Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. Under the partial and full removal options, all the plant electromechanical equipment, controls, protection, and station transformers would be removed from the powerhouse during its decommissioning and transported to an off-site disposal area.

Demolish & Remove Powerhouse Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Lump sum cost was taken from the M&H estimate with a 50% contingency applied to the lump sum total to account for material quantity variation presented by M&H. Per the M&H estimate, the scope of work for both the partial and full removal scenarios include demolition of the roof, masonry superstructure, reinforced concrete substructure and foundation, substation, gates and valves, tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All the demolished material would be transported offsite for disposal in a designated landfill area.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Demolish and Remove Auxiliary Spillway

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity includes either partial or full decommissioning and removal of the spillway structure. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Drain 3,902-Acre Reservoir

Lump sum cost was taken from the M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse during removal of the powerhouse structure, intake tower, penstocks, and a section of the embankment dam. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Once these elements of the project have been removed, the embankment dam would be breached sufficiently to allow the 100-year-flood flow to pass through the natural river channel located to the right of the powerhouse structure.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This item includes the demolition of reinforced concrete associated with this removal. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Cost per square foot was taken from the M&H estimate. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cost per cubic yard was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Cost per square foot was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. It is assumed that the 300-foot-wide main channel will be re-established with limited dredging. According to M&H's opinion, approximately 1,048,407 cubic yards of material will need to be removed to clear fine-grain sediments and re-establish the channel where necessary beyond the pilot channel. This amount is prorated at 85% to account for limited dredging within the new impoundment for the partial removal. For secondary tributary connections, which total 36,000 linear feet, it is assumed that dredging will occur at a width of 50-feet and an average depth of 4-feet, resulting in an estimated 300,000 cubic yards of material to be removed.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Remove Contaminated Sediments – Removal

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from 10% of the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Remove Contaminated Sediments – Disposal

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Reconstruct Roadway – Road

Under the partial and complete removal options, the existing 36th Street, which crosses the top of the earth embankment dam, would need to be reconstructed.

Reconstruct Roadway – Bridge

Under partial and complete removal options, the existing 36th Street, which crosses the top of the earth embankment dam, would need to be replaced with a new bridge approximately 875 feet long and 28 feet wide to span the river and descend the east side of the valley.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Muskegon River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Muskegon River, as well as both banks for all tributary lengths.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Channel Creation - Riffle Section at Downstream Tie In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 300-feet-wide, 1,000-feet-long, and 2-feet-deep for the full removal while only 500-feet-long for the partial removal. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 95-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 9-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner’s cost of 15% of the construction subtotal, less contaminated sediment disposal due to its volatility of occurrence and price, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $796,680 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.4 ROGERS DAM COST ESTIMATE ACTIVITIES

Table 4.2 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.2 Rogers Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Continued Use of 46-kV Substation	X	X	X
	Remove Overhead Lines Between Powerhouse and MTB No. 1	X	X	X
	Move Distribution Line from Plant Bus		X	X
Decommissioning and Demolition	Leave Powerhouse Intact	X		
	Remove Security Fencing		X	X
	Remove Storage Building	X	X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove or Lay-Up Equipment	X		
	Remove All Powerhouse Equipment		X	X
	Demolish & Remove Powerhouse Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons		X	X
	Modify Spillway to Maintain Flow/Pond Level	X		
	Demolish And Remove Service Spillway Including Concrete Weir and Apron		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Drain 449-Acre Reservoir		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation			X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
Decommissioning and Demolition	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demob		X	X
Abatement and Regulated Material Removal	Remove Contaminated Sediments - Removal		X	X
	Remove Contaminated Sediments - Disposal		X	X
Salvage	Salvage		X	X
Environmental and Restoration	Apply Erosion Control Measures - Silt Fence		X	X
	Apply Erosion Control Measures - Riprap Protection		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Concrete Weir Installation		X	
	Fish Passage	X	X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
Project Indirect	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Continued Use of 46-kV Substation

Lump sum cost was taken from the M&H estimate. Work would include retirement and replacement of existing equipment to the Rogers Plant to all continued functionality and service of the 46-kV substation for local distribution to Big Rapids and Stanwood following the surrendering scenario for all three scenarios.

Remove Overhead Lines Between Powerhouse and MTB No. 1

Linear footage and price per linear foot was taken from the M&H. Work includes removal of the overhead lines between the powerhouse and MTB No. 1 for all three scenarios.

Move Distribution Line from Plant Bus

Linear footage and price per linear foot was taken from the M&H. Under the partial and full removal, the distribution lines would no longer be required and removed entirely. Under the no-power generation scenario, electricity for the spillway operations would be required and services left in place to the plant for operation and maintenance of the plant.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H estimate. Scope of work outlined by M&H for the no-power generation scenario includes addressing public safety and environmental concerns to leave the powerhouse in place. This includes installation of precast concrete stoplogs in the power intake and draft tube exits to isolate the powerhouse water conduits following electromechanical equipment removal. Once isolated from reservoir and tailrace, the power conduits would be filled with sand up to the generator gallery floor.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Storage Building

Lump sum cost was taken from the M&H estimate. The onsite storage building will be demolished and disposed of offsite for all three scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 600 feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 11 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove or Lay-Up Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the turbine-generator with all the electromechanical and service equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove All Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. For the partial and full removal scenarios, all the powerhouse equipment related to the generation of electricity would be decommissioned and disposed of offsite.

Demolish & Remove Powerhouse Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Lump sum cost was taken from the M&H estimate with a 50% contingency applied to the lump sum total to account for material quantity variation presented by M&H. Per the M&H estimate, the scope of work for both the partial and full removal scenarios include demolition and disposal of the powerhouse, including roof, masonry superstructure, reinforced concrete substructure and foundation, trashracks, gates and valves, approach and tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All demolished material would be transported offsite for disposal in a designated landfill.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Demolish And Remove Service Spillway Including Concrete Weir and Apron

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity include demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Drain 449-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. This activity accounts for the sheet pile cutoff, in which all of the sheet pile wall as part of the core wall will be removed and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price was taken from the M&H estimate. For both the partial and full removal scenarios, this work includes additional hydraulic dredging of the reservoir area beyond the 200-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the Muskegon River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Remove Contaminated Sediments – Removal

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Remove Contaminated Sediments – Disposal

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity was taken from the M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Muskegon River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Muskegon River, as well as both banks for all tributary lengths.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 300-foot-length is considered upstream of the revised water impounded area. For the full removal, a 600-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot-drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 26-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Owner's Cost

An owner's cost of 15% of the construction subtotal construction subtotal, less contaminated sediment disposal due to its volatility of occurrence and price, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $225,289 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.5 CROTON DAM COST ESTIMATE ACTIVITIES

Table 4.3 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.3 Croton Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Overhead Lines Between Powerhouse and MTB No. 1		X	X
Decommissioning and Demolition	Remove Security Fencing		X	X
	Remove Storage Building		X	X
	Remove Office/Storage Building	X	X	X
	Leave Powerhouse Intact	X		
	Remove or Lay-Up Equipment	X		
	Remove Plant Access Road		X	X
	Remove Septic Tank / Drain Field		X	X
	Remove Piezometers		X	X
	Remove All Powerhouse Equipment		X	X
	Modify Spillway to Maintain Flow/Pond Level	X		
	Demolish & Remove Powerhouse Turbine Bay Including Intake / Tailrace, Retaining Walls, and Aprons		X	X
	Demolish And Remove Spillway Including Concrete Weir and Apron		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish & Remove Powerhouse Generator Hall			X
	Drain 1,209-Acre Reservoir		X	X
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo		X	
	Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal		X	
	Demolish/Remove Entire Earth Dam and Core Wall - Excavation		X	X
	Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition			X
	Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal			X
	Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging		X	X
	Remove Accumulated Non-Contaminated Sediments - Mob/Demo		X	X
Abatement and Regulated Material Removal	Remove Contaminated Sediments - Removal		X	X
	Remove Contaminated Sediments - Disposal		X	X
Salvage	Salvage		X	X
	Apply Erosion Control Measures - Silt Fence		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Apply Erosion Control Measures - Riprap Protection		X	X
	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading and Surface Preparation Amendments		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes & Jute Mat		X	X
	Habitat Restoration - Seeding		X	X
	Habitat Restoration - Planting		X	X
Environmental and Restoration	Channel Creation - Riffle Section at Downstream Tie In		X	X
	Sea Lamprey Control Structure			X
	Fish Passage w/ Sea Lamprey Control	X	X	
	Concrete Weir Installation		X	
Project Indirect	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring and O&M	X	X	X
Contingency	Cost Contingency	X	X	X

Remove Overhead Lines Between Powerhouse and MTB No. 1

Linear footage and price per linear foot was taken from the M&H. Work includes removal of the overhead lines between the powerhouse and MTB No. 1 as part of the partial and full removal scenarios.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Storage Building

Lump sum cost was taken from the M&H estimate. The onsite storage building will be demolished and disposed of offsite as part of the partial and full removal scenarios.

Remove Storage / Office Building

Lump sum cost was taken from the M&H estimate. The onsite storage building will be demolished and disposed of offsite for all three scenarios.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H estimate. Scope of work outlined by M&H for the no-power generation scenario includes addressing public safety and environmental concerns to leave the powerhouse in place. This includes installation of precast concrete stoplogs in the power intake and draft tube exits to isolate the powerhouse water conduits following electromechanical equipment removal. Once isolated from reservoir and tailrace, the power conduits would be filled with sand up to the generator gallery floor.

Remove or Lay-Up Equipment

Lump sum cost was taken from the M&H estimate. Scope of work for this cost activity from M&H, under the no-power generation scenario only, includes disabling the turbine-generator with all the electromechanical and auxiliary equipment related to the generation of electricity and its maintenance decommissioned and laid-up in the powerhouse. The laying-up of equipment would involve the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (CFCs) and other hazardous materials routinely associated with the plant's electromechanical equipment.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 1,000-feet of the access road to be removed with the remaining left to provide access to the relocated overhead distribution line.

Remove Septic Tank / Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 8 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove All Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. For the partial and full removal scenarios, all the powerhouse equipment related to the generation of electricity would be decommissioned and disposed of offsite.

Demolish & Remove Powerhouse Turbine Bay Including Spill Tubes, Intake/Tailrace, Retaining Wall & Aprons

Lump sum cost was taken from the M&H estimate. Per the M&H estimate, the scope of work for both the partial and full removal scenarios includes demolition and disposal of the powerhouse, including roof, masonry superstructure, reinforced concrete substructure and foundation, trashracks, gates and valves, approach and tailrace guide walls and aprons, and upstream and downstream sheet pile cutoffs. All demolished material would be transported offsite for disposal in a designated landfill.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Demolish And Remove Spillway Including Concrete Weir and Apron

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate for this cost activity include demolition and removal of the spillway structure, including gates, bridge, concrete weir, and apron. For the partial removal, the spillway guide walls, weir and apron would remain in place with gates removed. For the full removal, the demolition would be complete and include approach guide walls and apron, stilling basin weir, and tailrace guide walls and apron. The upstream sheet pile cutoff would also be removed to below the natural river channel level. All demolished material would be transported offsite for disposal in a designated landfill/recycled (salvage).

Demolish And Remove Powerhouse Generator Hall

Cubic yard unit price was taken from the M&H estimate. The powerhouse generator hall would be completely removed under the full removal scenario. As part of the powerhouse generator hall removal, the hall will be demolished and disposed of offsite.

Drain 1,209-Acre Reservoir

Lump sum cost was taken from the M&H estimate. Work per the M&H estimate includes draining the reservoir in a controlled manner through the powerhouse and spillway structure as they are demolished and removed in a staged process. The staged removal of the spillway would require that a steel sheet pile, gravel-filled cellular cofferdam with removable stoplogs, be placed upstream of the spillway. This cofferdam would allow the demolition of the entire spillway while regulating the diversion of river flows through the powerhouse structure. Once the reservoir has been lowered to the spillway foundation slab, the cofferdam would be removed to allow flows to be diverted through the previous spillway area to the natural river channel, and the remaining powerhouse bays, guide walls, and aprons would be removed. Once the powerhouse and spillway structures have been removed, the removal of the embankment dam would be completed. WSP price considers cofferdam and diversion for both scenarios and concrete stoplogs.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Excavation

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Reinforced Concrete Demo

Cubic yard unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Demolish/Remove Portion of Earth Dam to Create Sufficient Breach-Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. Work per the M&H estimate includes removal of portions of the embankment dam and core wall between the powerhouse and spillway and the embankment dam adjacent to the powerhouse to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. The core wall sheet pile cutoff would also be removed in this portion of the dam. This activity accounts for sheet pile cutoff with all material disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall – Excavation

Cubic yard unit price was taken from the M&H estimate. The earth dams would be completely removed under the full removal scenario. It is assumed excavated earth material will stay onsite to reflect the unit price prepared by M&H.

Demolish/Remove Entire Earth Dam and Core Wall - Reinforced Concrete Demolition

Cubic yard unit price was taken from the M&H estimate. As part of the earth dam removal, the concrete core wall will be demolished and disposed of offsite.

Demolish/Remove Entire Earth Dam and Core Wall - Sheet Piling Removal

Square foot unit price was taken from the M&H estimate. This activity accounts for the sheet pile cutoff, in which all of the sheet pile wall as part of the core wall will be removed and disposed of offsite.

Remove Accumulated Non-Contaminated Sediments - Dam Pilot Channel

Cubic yard unit price and quantity was taken from the M&H estimate. For both the partial and full removal, a 300-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments - Reservoir Dredging

Cubic yard unit price derived from was taken from the of the reservoir area beyond the 300-foot-wide pilot channel during the drawdown process to restore the floodplain characteristics of the Muskegon River. Unit quantities derived from M&H estimate and does not take into consideration additional volume removed for contaminated non-hazardous material. All material is considered non-contaminated and reused onsite. Following removal of the dam.

For the partial removal scenario, WSP considered an 85% quantity reduction in volume removed based on installation of a replacement weir system and upstream reservoir design to maintain a smaller impounded water level.

Remove Accumulated Non-Contaminated Sediments - Mob/Demob

Lump sum cost was taken from the M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Remove Contaminated Sediments – Removal

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from the 10% of the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Remove Contaminated Sediments – Disposal

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Salvage

Lump sum cost was taken from the M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Apply Erosion Control Measures - Silt Fence

Price per linear foot and unit quantity derived from M&H estimate. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures - Riprap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Muskegon River.

Bank Stabilization - Live Stakes & Jute Mat

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix B for the Muskegon River, as well as both banks for all tributary lengths.

Habitat Restoration – Seeding

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Habitat Restoration – Planting

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 50% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Channel Creation - Riffle Section at Downstream Tie In

WSP derived cost for performing additional channel restoration for a length immediately at and above the dam that includes imported rock. For the partial removal, a 300-foot-length is considered upstream of the revised water impounded area. For the full removal, a 600-foot-length is considered for the dam footprint extending to the same termination point as the partial removal.

Sea Lamprey Control Structure

WSP added cost. To address non-native sea lamprey from migrating upstream, a barrier will need to be designed/installed to prevent their specific passage under the full removal scenario. Costs were considered equivalent for this type of structure as to the concrete weir for the partial removal.

Fish Passage w/ Sea Lamprey Control

WSP added cost. To address fish passage through the existing structure, a fish passage structure would be designed and installed under the no-power and partial removal scenarios. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the no-power scenario, 42-vertical-feet was derived from available lidar/topography information for the local area. Under the partial removal scenario, a 6-vertical-foot drop in water height considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot drop and 3-foot footer) and 4-foot width.

Owner's Cost

An owner’s cost of 15% of the construction subtotal, less contaminated sediment disposal due to its volatility of occurrence and price, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package

and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $400,000 for a fish ladder design and $351,752 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring and O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Cost Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.6 COST ESTIMATE RESULTS SUMMARY

The full conceptual decommissioning cost estimate for each dam site and scenario are provided in Appendix A through C. Tables 4.4 to Table 4.6 provide a summary of total cost by category for Hardy, Rogers, and Croton dams, respectively.

Table 4.4 Hardy Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	$239,902	$115,858	$115,858
Decommissioning and Demolition	$177,116	$35,545,192	$44,445,379
Abatement and Regulated Material Removal	-	$92,596,539	$92,596,539
Salvage	-	$ (135,398)	$ (135,398)
Environmental and Restoration	$4,750,000	$86,425,669	$91,712,779
Subtotal	**$5,167,018**	**$214,547,860**	**$228,735,157**
Project Indirect	$2,674,281	$26,315,002	$28,823,398
Contingency Cost	$516,702	$21,454,786	$22,873,516
Total Project Cost	**$8,358,001**	**$262,317,648**	**$280,432,071**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Duplicate items for seeding the former reservoir bottom were identified in the partial and full removal, one generated from M&H in 2021 and one prepare by WSP. The duplicative pricing from M&H 2021 was removed.
2. Rounding of quantities to the next whole integer were applied in the estimates herein.
3. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.
4. Revision in application of project indirect costs for consistency

Table 4.5 Rogers Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	$66,139	$73,239	$73,239
Decommissioning and Demolition	$517,252	$19,612,261	$24,476,039
Abatement and Regulated Material Removal	-	$7,963,832	$7,963,832
Salvage	-	$(31,000)	$(31,000)
Environmental and Restoration	$1,300,000	$24,127,060	$26,457,656
Subtotal	**$1,883,391**	**$51,745,392**	**$58,939,766**
Project Indirect	$1,167,057	$9,453,915	$10,528,762
Contingency Cost	$188,340	$5,174,540	$5,893,977
Total Project Cost	**$3,238,788**	**$66,373,847**	**$75,362,505**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.
3. Revision in application of project indirect costs for consistency

Table 4.6 Croton Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$71,000	$71,000
Decommissioning and Demolition	$474,776	$31,254,938	$36,447,317
Abatement and Regulated Material Removal	-	$28,690,199	$28,690,199
Salvage	-	$(47,350.00)	$(47,350)
Environmental and Restoration	$2,100,000	$44,310,025	$51,783,317
Subtotal	**$2,574,776**	**$104,278,812**	**$116,944,483**
Project Indirect	$1,490,563	$16,179,165	$18,375,629
Contingency Cost	$257,478	$10,427,882	$11,694,449
Total Project Cost	**$4,322,817**	**$130,885,859**	**$147,014,561**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Rounding of quantities to the next whole integer were applied in the estimates herein.
2. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.
3. Revision in application of project indirect costs for consistency

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APPENDIX

A HARDY DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

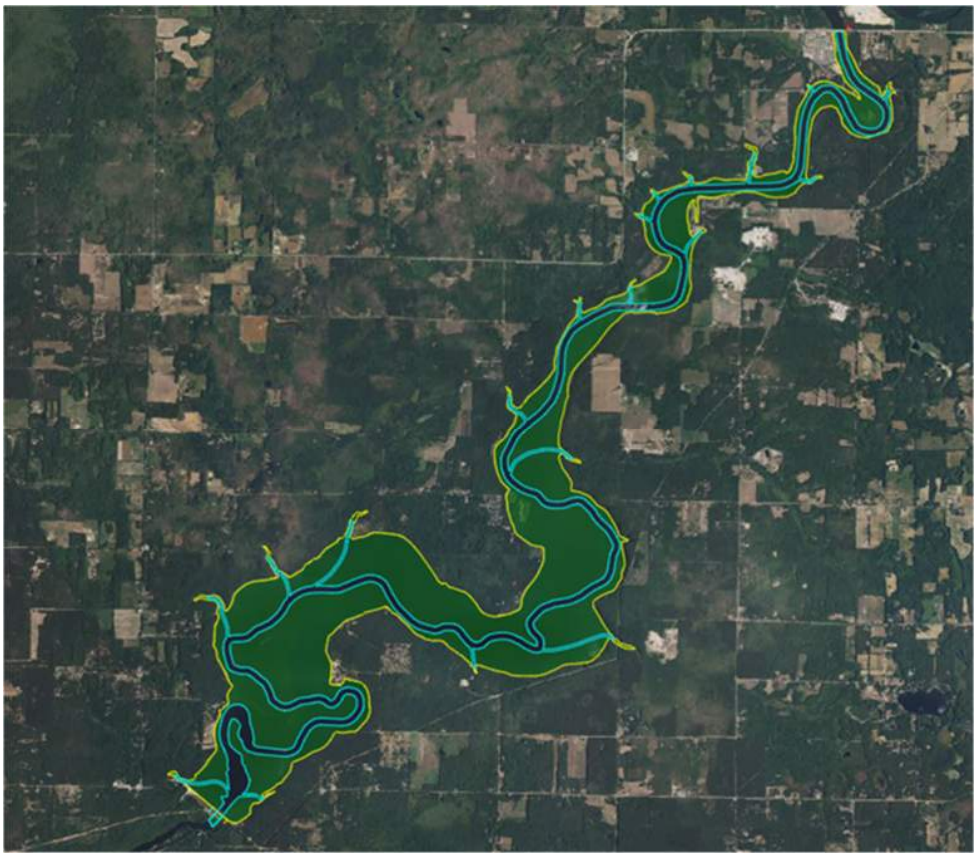
A-1 HARDY DAM SITE SUMMARY

Site Characteristics

- A 114-foot-high and 2,600-foot-long earth embankment dam section with a concrete core wall.
- A 600-foot-long fixed-crest emergency spillway with a concrete-lined (for the upper 880 feet) discharge channel.
- A reservoir with a normal surface area of 3,902 acres at elevation 822.0 feet (USGS datum) and a gross storage of 134,973 acre-feet with depths varying 70'-100' within the channel that meanders through the impoundment.
- A steel-framed concrete-and-masonry intake structure with upper and lower intake openings.
- Three concrete penstocks to convey water from the lower intake opening to the intake tower.
- Three steel-lined concrete penstocks to convey water from the intake tower to the powerhouse.
- A steel-framed concrete-and-masonry powerhouse containing three generating units with a total installed capacity of 29,229 kW.
- 200-foot-long concrete apron with retaining walls in the tailrace. 200-foot-long concrete apron with retaining walls in the tailrace.
- Hydro plant is a peaking facility and regulates flow downstream to the Croton Dam.
- Associated appurtenant structures.



Surrendering – Partial Removal



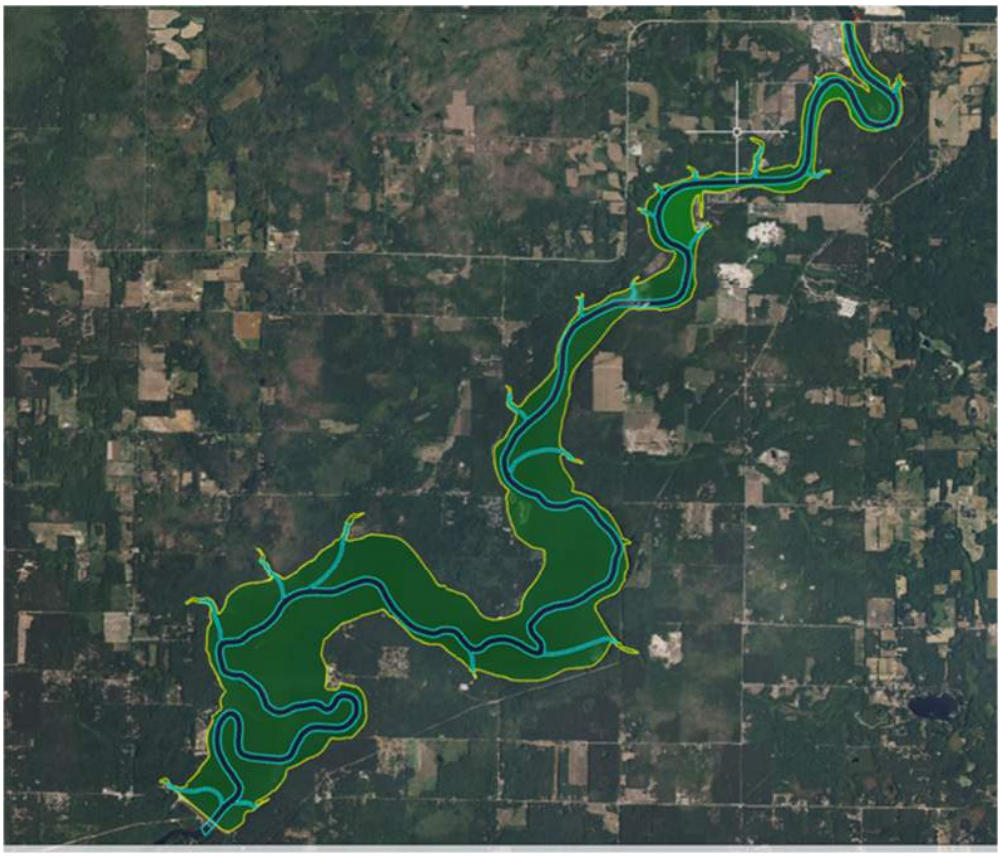
- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Mitigates water quality and fish passage interests from Michigan DNR
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
  - Auxiliary spillway and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Water quality (temperature and DO) may still be out of compliance for cold water fisheries under License Article 405.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL

because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:

- Several (>30) inhabited residential properties along left bank between 800 FT to 7,000 FT downstream of dam
- Hardy Dam Recreation Area located approximately 3,000 FT downstream of dam

- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - The majority of reservoir riparian boundary is forested and owned by Consumers, but there are several parks, campgrounds (with dock space), marinas and boat ramps that would likely see significant shoreline retreat.
      - 5 major parks
      - 14 commercial marinas
      - Club and homeowner association uses
      - Individual and group docking sites.
    - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
    - Impoundment depths exceed 100' near the dam with much of the impoundment in the 70'-100'. Restoration options associated with decommissioning should develop alternatives to preserve a target depth/habitat and minimize dredging.
    - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focuses on managing newly created bottom lands to restrict non-public development.
    - Under Mead & Hunt assumptions, approximately 3,902 acres converted from open-water impoundment to a 200' wide channel occupying approximately 620 acres. Significant planning and analysis required to determine how to manage existing recreational features under reduced reservoir limits
  - Baseline Studies - Sediment Characterization & Bathymetry
    - Potential for contaminated sediment is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
    - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features, and aquatic habitat.

Surrendering – Full Removal



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Mitigates water quality and fish passage interests from Michigan DNR
  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - The majority of reservoir riparian boundary is forested and owned by Consumers, but there are several parks, campgrounds (with dock space),

marinas and boat ramps that would likely see significant shoreline retreat.
    - 5 major parks
    - 14 commercial marinas
    - Club and homeowner association uses
    - Individual and group docking sites.
  - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
  - Impoundment depths exceed 100' near the dam with much of the impoundment in the 70'-100'. Restoration options associated with decommissioning should develop alternatives to preserve a target depth/habitat and minimize dredging.
  - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
  - Under Mead & Hunt assumptions, approximately 3,902 acres converted from open-water impoundment to a 200' wide channel occupying approximately 620 acres. Significant planning and analysis required to determine how to manage existing recreational features.
- Baseline Studies - Sediment Characterization & Bathymetry
  - Potential for contaminated sediments is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
  - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features, and aquatic habitat.

A-2 HARDY DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hardy Hydroplant
Decommissioning Cost Evaluation - Non-Power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Leave powerhouse intact	LS	$ 239,902.00	1	$ 239,902.00
Decommissioning and Demolition	Remove or lay-up equipment	LS	$ 88,558.00	1	$ 88,558.00
	Modify spillway to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558.00
Environmental and Restoration	Fish Passage	VLF	$ 50,000.00	95	$ 4,750,000.00
	Subtotal				**$ 5,167,018.00**
Project Indirect	Owner's Cost				$ 775,053.00
	Baseline Studies, Engineering and Permitting				$ 1,382,526.00
	Construction Management, Biological Monitoring and O&M				$ 516,702.00
Contingency	Cost Contingency				$ 516,702.00
Total Project Costs	**Total**				**$ 8,358,001.00**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

A-3 HARDY DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hardy Hydroplant
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove transformer & lines from powerhouse to 138kV	LS	$ 115,858.00	1	$ 115,858.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	6,000	$ 14,157.00
	Remove plant access road	STA	$ 589.86	635	$ 374,562.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,361.85	73	$ 172,415.00
	Demolish & remove intake structure & footbridge	LS	$ 2,582,603.00	1	$ 2,582,603.00
	Remove all powerhouse equipment	LS	$ 387,618.00	1	$ 387,618.00
	Demolish & remove powerhouse including spill tubes, intake/tailrace, retaining wall & apr	LS	$ 3,739,631.00	1	$ 3,739,631.00
	Drain 3,902-acre reservoir	LS	$ 392,400.00	1	$ 392,400.00
	Demolish/remove portion of earth dam to create sufficient breach - Excavation	CY	$ 14.47	1,140,000	$ 16,499,194.00
	Demolish/remove portion of earth dam to create sufficient breach - Reinforced concrete d	CY	$ 207.05	3,750	$ 776,451.00
	Demolish/remove portion of earth dam to create sufficient breach - sheet piling removal	SF	$ 2.36	48,000	$ 113,254.00
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	CY	$ 11.81	142,400	$ 1,681,642.00
	Remove accumulated non-contaminated sediments - Reservoir Dredging	CY	$ 7.09	1,191,146	$ 8,445,226.00
	Remove accumulated non-contaminated sediments - Mob/Demob	LS	$ 118,077.00	3	$ 354,231.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	629,523	$ 4,463,319.00
	Remove contaminated Sediments - Disposal	TON	$ 70.00	1,259,046	$ 88,133,220.00
Salvage	Salvage	LS	$ (135,398.00)	1	$ (135,398.00)
Environmental and Restoration	Reconstruct roadway - Road	STA	$ 35,423.00	22	$ 779,306.00
	Reconstruct roadway - Bridge	SF	$ 330.00	24,500	$ 8,085,000.00
	Apply erosion control measures - silt fence	LF	$ 5.00	100,000	$ 500,000.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2,473,546	$ 19,788,368.00
	Grading & surface preparation/amendments	ACRE	$ 6,700.00	2,803	$ 18,780,100.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	26,760	$ 8,919,911.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	223,640	$ 12,195,090.00
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	2,803	$ 8,689,300.00
	Habitat Restoration - Planting	ACRE	$ 3,072.00	1,402	$ 4,306,944.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	11,111	$ 1,666,650.00
	Concrete Weir Installation	LF	$ 5,050.00	300	$ 1,515,000.00
	Fish Passage	VLF	$ 50,000.00	9	$ 450,000.00
	Subtotal				**$ 214,547,860.00**
Project Indirect	Owner's Cost				$ 18,962,196.00
	Baseline Studies, Engineering and Permitting				$ 4,824,513.00
	Construction Management, Biological Monitoring and O&M				$ 2,528,293.00
Contingency	Cost Contingency				$ 21,454,786.00
Total Project Costs	**Total**				**$ 262,317,648.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

A-4 HARDY DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Hardy Hydroplant
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove transformer & lines from powerhouse to 138 kV	LS	$ 115,858.00	1	$ 115,858.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	6,000	$ 14,157.00
	Remove plant access road	STA	$ 590.00	635	$ 374,650.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,361.85	73	$ 172,415.00
	Demolish & remove intake structure & footbridge	LS	$ 2,582,603.00	1	$ 2,582,603.00
	Remove all powerhouse equipment	LS	$ 387,618.00	1	$ 387,618.00
	Demolish & remove powerhouse including spill tubes, intake/tailrace, retaining wall & apron	LS	$ 3,739,631.00	1	$ 3,739,631.00
	Demolish and remove emergency spillway	CY	$ 14.64	120,000	$ 1,756,585.00
	Drain 3,902-acre reservoir	LS	$ 392,400.00	1	$ 392,400.00
	Demolish/remove entire earth dam, core wall and emergency spillway - excavation	CY	$ 14.64	1,422,540	$ 20,823,436.00
	Demolish/remove entire earth dam, core wall and emergency spillway - reinforced concrete demo	CY	$ 207.00	10,500	$ 2,173,500.00
	Demolish/remove entire earth dam, core wall and emergency spillway - sheet piling removal	SF	$ 2.36	178,000	$ 419,982.00
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	CY	$ 11.81	142,400	$ 1,681,642.00
	Remove accumulated non-contaminated sediments - Reservoir Dredging	CY	$ 7.09	1,348,407	$ 9,560,721.00
	Remove accumulated non-contaminated sediments - Mob/Demob	LS	$ 118,077.00	3	$ 354,231.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	629,523	$ 4,463,319.00
	Remove contaminated Sediments - Disposal	TON	$ 70.00	1,259,046	$ 88,133,220.00
Salvage	Salvage	LS	$ (135,398.00)	1	$ (135,398.00)
Environmental and Restoration	Reconstruct roadway - Road	STA	$ 35,423.00	22	$ 779,306.00
	Reconstruct roadway - Bridge	SF	$ 330.00	24,500	$ 8,085,000.00
	Apply erosion control measures - silt fence	LF	$ 0.95	100,000	$ 95,100.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2,913,347	$ 23,306,776.00
	Grading & surface preparation/amendments	ACRE	$ 6,700.00	2,878	$ 19,282,600.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	26,760	$ 8,919,911.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	223,640	$ 12,195,090.00
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	2,878	$ 8,921,800.00
	Habitat Restoration - Planting	ACRE	$ 3,072.00	1,707	$ 5,243,904.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 186.00	22,222	$ 4,133,292.00
	Subtotal				**$ 228,735,157.00**
Project Indirect	Owner's Cost				$ 21,090,291.00
	Baseline Studies, Engineering and Permitting				$ 4,921,068.00
	Construction Management, Biological Monitoring and O&M				$ 2,812,039.00
Contingency	Cost Contingency				$ 22,873,516.00
Total Project Costs	**Total**				**$ 280,432,071.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

B ROGERS DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

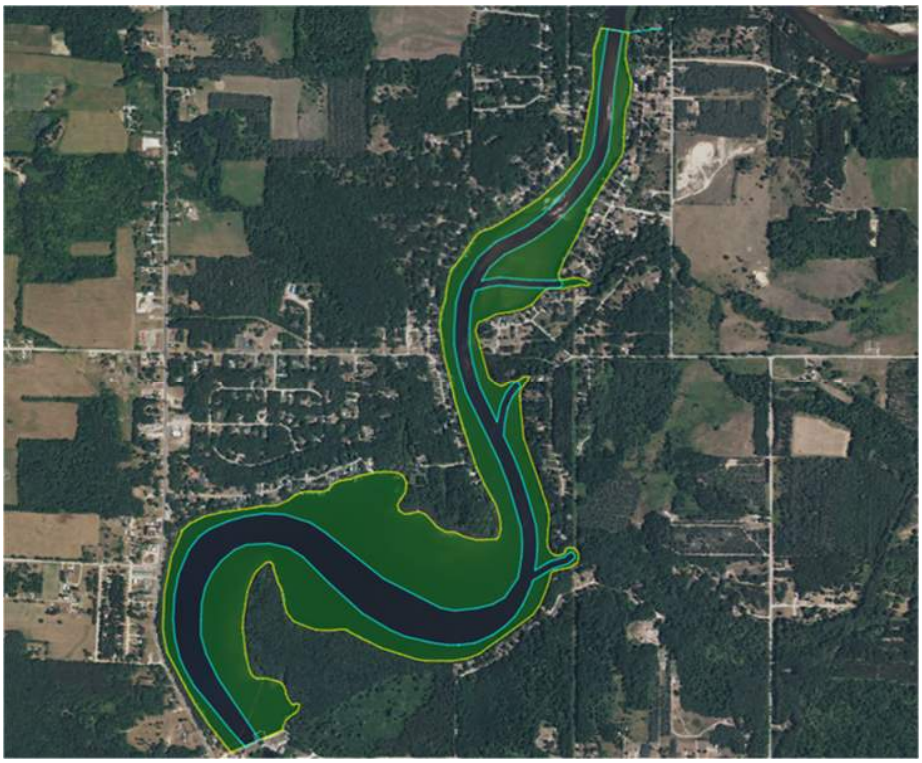
B-1 ROGERS DAM SITE SUMMARY

Site Characteristics

- Three earth embankment dam sections (one section 48 feet high and two sections 40 feet high), each with a concrete core wall and totaling 600 feet long.
- A 40-foot-high, 156-foot-long concrete spillway with six steel radial gates, a defunct log chute, and a concrete-lined discharge channel extending approximately 100 feet downstream.
- A reservoir with a normal surface area of 449 acres at elevation 861.6 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 4,678 acre-feet.
- Reservoir shoreline spans approximately 21.3 miles and contains an estimated 200+ private parcels with riparian frontage, Mecosta Township Ulrich Park, and two MDNR managed boat launches.
- A concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 5,418 kilowatts (kW).
- A 20-foot-long concrete apron with retaining walls in the powerhouse tailrace.
- Associated appurtenant structures.



Surrendering – Partial Removal



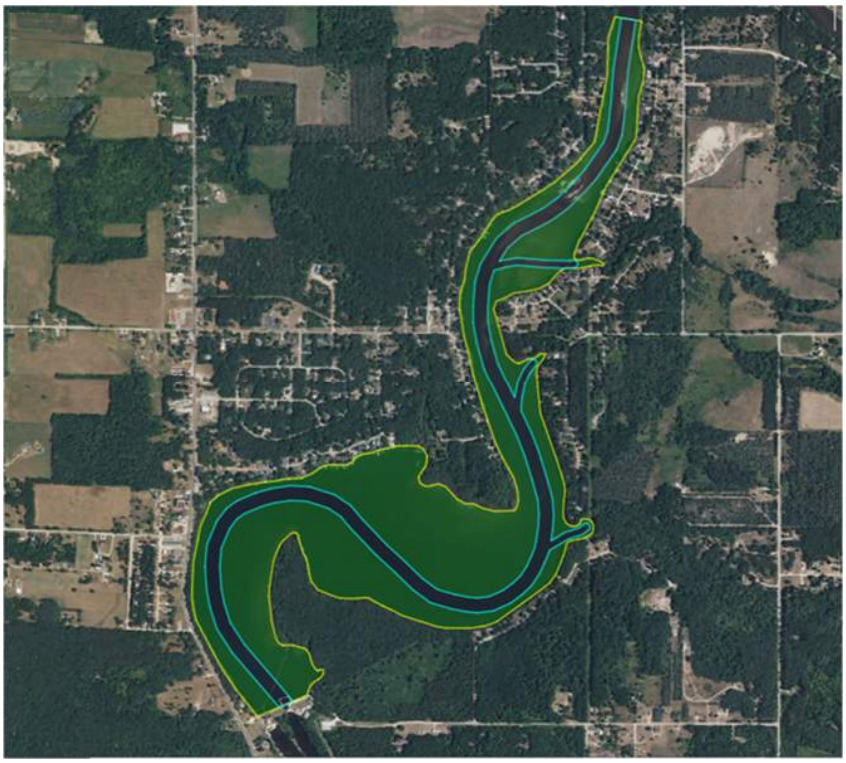
- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates regulatory requirements for run-of-river operation coordination with Croton Dam
  - Eliminates risks of water quality violations in future years from elevated temperatures (not specifically an issue now but thermal loading in Rogers manifests in Hardy and Croton)
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
  - Auxiliary spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes,

agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:

- 3 inhabited residential properties located along right bank between 300 FT to 700 FT downstream of dam
- 10 inhabited residential properties located along left bank side at around 3,000 FT downstream of dam
- S. State Street Bridge approximately 3,000 FT downstream of dam
- Rt. 131 Bridge approximately 6,300 FT downstream of dam

- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - There are a number (~200+) waterfront private parcels with riparian access that would likely experience shoreline retreat or change as a result of reservoir lowering. Evaluation of proposed conditions critical to early engagement with stakeholders.
    - Mecosta Township Ulrich Park.
    - MDNR manages Mecosta-Big Rapids Township Line Boat Launch & Rogers Height Boat Launch.
    - Evaluate options to perform additional dredging to create tributaries/canals to preserve water access to private properties and recreational facilities or construct new recreational facilities/parks within newly created bottomland/shoreline.
    - Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
    - Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
    - Under Mead & Hunt assumptions, approximately 499 acres converted from open-water impoundment to a 200' wide channel occupying approximately 75 acres.
  - Baseline studies including sediment characterization and bathymetry are critical to planning and alternative evaluation.
    - Potential contaminants have potential to drive costs considerable if removal is required.
    - Sediment characterization would enable planning for future reuse of dredged sediment to create wetlands, transition areas and uplands within newly created riparian corridor.
    - Updated bathymetry data would enable preliminary modeling of proposed conditions and impacts to neighboring stakeholders, recreational features and maintaining tributary connections.

Surrendering – Full Removal



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates regulatory requirements for run-of-river operation coordination with Croton Dam.
  - Eliminates risks of water quality violations in future years from elevated temperatures (not specifically an issue now but thermal loading in Rogers manifests in Hardy and Croton).
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
- Key Considerations
  - Evaluate impact loss in reservoir has on neighboring properties with riparian access and recreational use/access.
    - There are a number (~200+) waterfront private parcels with riparian access that would likely experience shoreline retreat or change as a result of reservoir lowering. Evaluation of proposed conditions critical to early engagement with stakeholders.

- Mecosta Township Ulrich Park within buffer zone.
- MDNR manages Mecosta-Big Rapids Township Line Boat Launch & Rogers Height Boat Launch.
- Evaluate options to perform additional dredging to create tributaries/canals to preserve water access to private properties and recreational facilities or construct new recreational facilities/parks within newly created bottomland/shoreline.
- Evaluations should include temporary impacts and mechanisms to preserve recreational access (i.e. – during drawdown) and permanent impacts.
- Coordination with MDNR on who would own and manage newly created bottom lands within the impoundment. MDNR focus on managing newly created bottom lands to restrict non-public development.
- Under Mead & Hunt assumptions, approximately 499 acres converted from open-water impoundment to a 200' wide channel occupying approximately 75 acres.

- Baseline studies including sediment characterization and bathymetry are critical to planning and alternative evaluation.
  - Potential contaminants have potential to drive costs considerable if removal is required.
  - Sediment characterization would enable planning for future reuse of dredged sediment to create wetlands, transition areas and uplands within newly created riparian corridor.
  - Bathymetry data would enable preliminary modeling of proposed conditions and impacts to neighboring stakeholders, recreational features and maintaining tributary connections.

B-2 ROGERS DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Rogers Hydroplant
Decommissioning Cost Evaluation - Non-Power Operation

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
	Continued use of 46-kV substation	LS	$ 59,039.00	1	$ 59,039.00
Utility Separation	Remove overhead lines between Powerhouse and MTB No. 1	LF	$ 71.00	100	$ 7,100.00
	Leave powerhouse intact	LS	$ 245,565.00	1	$ 245,565.00
	Remove or lay-up equipment	LS	$ 88,558.00	1	$ 88,558.00
	Modify spillway to maintain flow/pond level	LS	$ 88,667.00	1	$ 88,667.00
Decommissioning and Demolition	Remove storage building	LS	$ 94,462.00	1	$ 94,462.00
Environmental and Restoration	Fish Passage	VLF	$ 50,000.00	26	$ 1,300,000.00
	Subtotal				**$ 1,883,391.00**
	Owner's Cost				$ 282,509.00
	Baseline Studies, Engineering and Permitting				$ 696,208.00
Project Indirect	Construction Management, Biological Monitoring and O&M				$ 188,340.00
Contingency	Cost Contingency				$ 188,340.00
Total Project Costs	**Total**				**$ 3,238,788.00**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

B-3 ROGERS DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Rogers Hydroplant
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Continued use of 46-kV substation	LS	$ 59,039.00	1	$ 59,039.00
	Remove overhead lines between Powerhouse and MTB No. 1	LF	$ 71.00	100	$ 7,100.00
	Move distribution line from plant bus	LF	$ 71.00	100	$ 7,100.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	2,000	$ 4,719.00
	Remove storage building	LS	$ 94,462.00	1	$ 94,462.00
	Remove plant access road	STA	$ 590.00	6	$ 3,540.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	Each	$ 2,362.00	11	$ 25,982.00
	Remove all powerhouse equipment	LS	$ 191,663.00	1	$ 191,663.00
	Demolish & remove powerhouse including intake/tailrace, retaining wall & ap	LS	$ 1,207,992.00	1	$ 1,207,992.00
	Demolish and remove emergency spillway including concrete weir and apron	LS	$ 21,822.00	1	$ 21,822.00
	Drain 449-acre reservoir	LS	$ 981,403.00	1	$ 981,403.00
	Demolish/remove portion of earth dam to create sufficient breach - Excavatio	CY	$ 14.64	69,833	$ 1,022,356.00
	Demolish/remove portion of earth dam to create sufficient breach - Reinforce	CY	$ 207.00	430	$ 89,010.00
	Demolish/remove portion of earth dam to create sufficient breach - sheet pil	SF	$ 2.36	6,600	$ 15,576.00
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	CY	$ 11.81	136,800	$ 1,615,509.00
	Remove accumulated non-contaminated sediments - Reservoir Dredging	CY	$ 7.09	2,003,997	$ 14,208,342.00
	Remove accumulated non-contaminated sediments - Mob/Demob	LS	$ 118,077.00	1	$ 118,077.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	54,143	$ 383,871.00
	Remove contaminated Sediments - Disposal	TON	$ 70.00	108,285	$ 7,579,961.00
Salvage	Salvage	LS	$ (31,000.00)	1	$ (31,000.00)
Environmental and Restoration	Apply erosion control measures - silt fence	LF	$ 5.00	18,000	$ 90,000.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2,073,830	$ 16,590,644.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	4,908	$ 1,635,984.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	34,672	$ 1,890,665.00
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	225	$ 697,500.00
	Habitat Restoration - Planting	ACRE	$ 3,072.00	113	$ 345,600.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	4,444	$ 666,667.00
	Concrete weir installation	LF	$ 5,050.00	200	$ 1,010,000.00
	Fish Passage	VLF	$ 50,000.00	9	$ 450,000.00
	Subtotal				**$ 51,745,392.00**
Project Indirect	Owner's Cost				$ 6,624,815.00
	Baseline Studies, Engineering and Permitting				$ 1,945,791.00
	Construction Management, Biological Monitoring and O&M				$ 883,309.00
Contingency	Cost Contingency				$ 5,174,540.00
Total Project Costs	**Total**				**$ 66,373,847.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

B-4 ROGERS DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Rogers Hydroplant
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Continued use of 46-kV substation	LS	$ 59,039.00	1	$ 59,039.00
	Remove overhead lines between Powerhouse and MTB No. 1	LF	$ 71.00	100	$ 7,100.00
	Move distribution line from plant bus	LF	$ 71.00	100	$ 7,100.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	2,000	$ 4,719.00
	Remove storage building	LS	$ 94,462.00	1	$ 94,462.00
	Remove plant access road	STA	$ 590.00	6	$ 3,540.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,362.00	11	$ 25,982.00
	Remove all powerhouse equipment	LS	$ 191,663.00	1	$ 191,663.00
	Demolish & remove powerhouse including intake/tailrace, retaining wall &	LS	$ 1,207,992.00	1	$ 1,207,992.00
	Demolish and remove emergency spillway including concrete weir and aprc	LS	$ 2,148,262.00	1	$ 2,148,262.00
	Drain 449-acre reservoir	LS	$ 957,351.00	1	$ 957,351.00
	Demolish/remove entire earth dam and core wall - excavation	CY	$ 14.64	84,952	$ 1,243,545.00
	Demolish/remove entire earth dam and core wall - reinforced concrete den	CY	$ 207.00	500	$ 103,500.00
	Demolish/remove entire earth dam and core wall - sheet piling removal	SF	$ 2.36	14,000	$ 33,032.00
	Remove accumulated non-contaminated sediments - Dam Pilot Channel	CY	$ 11.81	136,800	$ 1,615,509.00
	Remove accumulated non-contaminated sediments - Reservoir Dredging	CY	$ 7.09	2,357,644	$ 16,716,597.00
	Remove accumulated non-contaminated sediments - Mob/Demob	LS	$ 118,077.00	1	$ 118,077.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	54,143	$ 383,871.00
	Remove contaminated Sediments - Disposal	TON	$ 70.00	108,285	$ 7,579,961.00
Salvage	Salvage	LS	$ (31,000.00)	1	$ (31,000.00)
Environmental and Restoration	Apply erosion control measures - silt fence	LF	$ 5.00	18,000	$ 90,000.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	2,442,596	$ 19,540,768.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	4,908	$ 1,635,984.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	34,672	$ 1,890,665.00
	Habitat Restoration - Seeding	Acre	$ 3,100.00	262	$ 813,720.00
	Habitat Restoration - Planting	Acre	$ 3,072.00	131	$ 403,185.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	8,889	$ 1,333,334.00
	Subtotal				**$ 58,939,766.00**
Project Indirect	Owner's Cost				$ 7,703,971.00
	Baseline Studies, Engineering and Permitting				$ 1,797,594.00
	Construction Management, Biological Monitoring and O&M				$ 1,027,197.00
Contingency	Contingency				$ 5,893,977.00
Total Project Costs	**Total**				**$ 75,362,505.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

APPENDIX

C CROTON DAM HYDROELECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

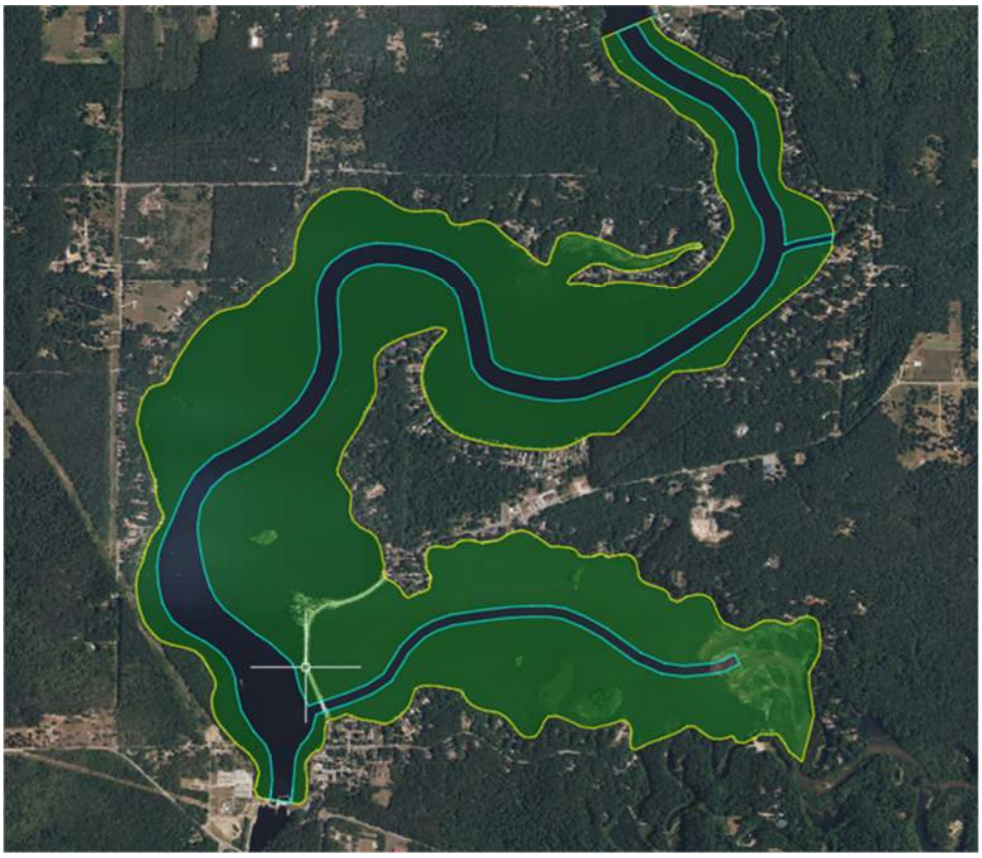
C-1 CROTON DAM SITE SUMMARY

Site Characteristics

- Two earth embankment dam sections (one section 53 feet high and one section 19 feet high), each with a concrete core wall.
- A 53-feet-high and 240-feet-long concrete spillway with eight steel radial gates, an overflow weir, and a concrete-lined discharge channel extending approximately 250 feet downstream with a 7-feet-high concrete weir located approximately 53 feet downstream.
- A reservoir with a normal surface area of 1,209 acres at elevation 722.0 feet (USGS datum) and a gross storage of 21,932 acre-feet.
- A concrete-and-masonry powerhouse containing four generating units with a total installed capacity of 7,473 kW.
- A 31-feet-long concrete apron with retaining walls in the tailrace.
- Associated appurtenant structures.



Surrendering – Partial Decommissioning



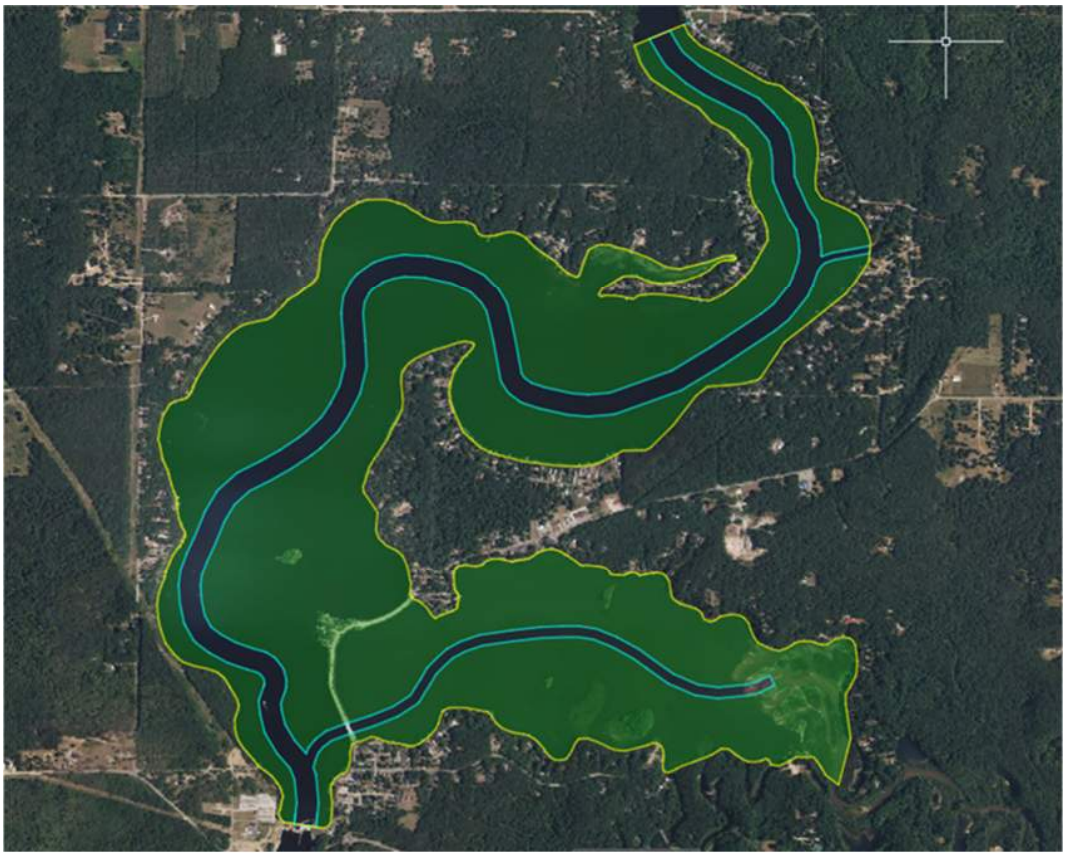
- Pros
  - Reduces legal liability and maintenance required of the existing facilities.
  - Mitigates many of the regulatory requirements associated with the existing spillway & reservoir.
  - Fish passage improved but requires installation of fish passage system; discontinuation of MDNR stocking.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.
  - Spillways and other features not required for dam breach are left in place. Consideration should be made for future use/maintenance.
  - Water quality (temperature and potential DO may still be out of compliance for cold water fisheries under License Article 405.
  - Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational

use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a SIGNIFICANT HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists. This opinion is based on the following considerations:

- 1 inhabited residential property along left bank approximately 2,400 FT downstream of dam
- Several (>30) inhabited residential properties along right bank between 4,800 FT to 12,500 FT downstream of dam
- Croton Drive Bridge approximately 750 FT downstream of dam
- Happy Campers Campground approximately 1,500 FT downstream of dam

- Key Considerations
  - Evaluate future use of newly created shoreline and bottomland within impoundment.
    - MDNR focus on managing newly created bottomlands to restrict non-public development.
    - Property loss value evaluations for loss in property value for private properties with diminished riparian access. (500+ properties, many with dock space)
    - Under Mead & Hunt assumptions, approximately 925 acres converted from open water impoundment to upland or wetland. Considerations for selective additional dredging to preserve channels in critical areas.
  - Sea Lamprey control and treatment
    - Hydroplant turbines are critical for mixing for lampricide for downstream treatment of Sea Lamprey. Consultation with MDNR on alternative methods recommended. Currently, treatment occurs every 2-4 years at a cost of approximately $1.1M per treatment.
    - Dam is critical physical barrier for blocking upstream migration of Sea Lamprey. The dam protects nearly 200 miles of the Muskegon River. Removal should consider newly constructed barriers to limit upstream migration in consultation with MDNR.
  - Baseline Studies - Sediment Characterization & Bathymetry
    - Potential for contaminated sediments is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
    - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features and aquatic habitat.

Surrendering – Full Decommissioning



- Pros
  - Eliminates legal liability and maintenance of existing facilities.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
  - Eliminates issues with water quality (temperature and potential DO)
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Potential for contaminated sediments & disposal could substantially increase costs.

- Key Considerations
    - Evaluate future use of newly created shoreline and bottomland within impoundment.
        - MDNR focus on managing newly created bottomlands to restrict non-public development.
        - Property loss value evaluations for loss in property value for private properties with diminished riparian access. (500+ properties, many with dock space)
        - Under Mead & Hunt assumptions, approximately 925 acres converted from open water impoundment to upland or wetland. Considerations for selective additional dredging to preserve channels in critical areas.
    - Sea Lamprey control and treatment
        - Hydroplant turbines are critical for mixing for lampricide for downstream treatment of Sea Lamprey. Consultation with MDNR on alternative methods recommended.
        - Dam is critical physical barrier for blocking upstream migration of Sea Lamprey. The dam protects nearly 200 miles of the Muskegon River. Removal should consider newly constructed barriers to limit upstream migration in consultation with MDNR.
        - Barrier system should be installed to prevent upstream migration of invasive species (sea lamprey and round goby); refer to Fish Pass System example by Great Lakes Fishery Commission.
    - Baseline Studies - Sediment Characterization & Bathymetry
        - Potential for contaminated sediments is significant influence on costs. Grain size distribution also critical for determining dredge volumes required.
        - Bathymetry data critical to model propose conditions to develop preliminary plans and impacts to neighboring stakeholders, recreational features and aquatic habitat.

C-2 CROTON DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Non-Power Surrender

Category	Cost Activity	Unit	Unit Cost	Quantity	WSP Opinion of Cost
Decommissioning and Demolition	Remove office/storage building	LS	$ 94,462.00	1	$ 94,462.00
	Leave powerhouse intact	LS	$ 203,198.00	1	$ 203,198.00
	Remove of lay-up equipment	LS	$ 88,558.00	1	$ 88,558.00
	Modify spillway to maintain flow/pond level	LS	$ 88,558.00	1	$ 88,558.00
Environmental and Restoration	Fish Passage w/ sea lamprey control	VLF	$ 50,000.00	42	$ 2,100,000.00
	Subtotal				**$ 2,574,776.00**
Project Indirect	Owner's Cost				$ 386,216.00
	Baseline Studies, Engineering and Permitting				$ 846,869.00
	Construction Management, Biological Monitoring and O&M				$ 257,478.00
Contingency	Cost Contingency				$ 257,478.00
Total Project Costs	**Total**				**$ 4,322,817.00**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

C-3 CROTON DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove power cable between powerhouse and MTB No. 1	LF	$ 71.00	1,000	$ 71,000.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,300	$ 3,068.00
	Remove storage building	LS	$ 10,000.00	1	$ 10,000.00
	Remove office/storage building	LS	$ 94,462.00	1	$ 94,462.00
	Remove plant access road	STA	$ 590.00	10	$ 5,900.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,362.00	8	$ 18,896.00
	Remove all powerhouse equipment	LS	$ 265,954.00	1	$ 265,954.00
	Demolish and remove powerhouse turbine bay including intake/tailrace, retaining walls, and aprons	LS	$ 1,093,075.00	1	$ 1,093,075.00
	Demolish and remove spillway including concrete weir and apron.	LS	$ 2,935,154.00	1	$ 2,935,154.00
	Drain 1,209-acre reservoir	LS	$ 1,170,076.00	1	$ 1,170,076.00
	Demolish/remove portion of earth dam to create sufficient breach - Excavation	CY	$ 14.64	34,030	$ 498,200.00
	Demolish/remove portion of earth dam to create sufficient breach - Reinforced concrete demo	CY	$ 207.00	495	$ 102,465.00
	Demolish/remove portion of earth dam to create sufficient breach - sheet piling removal	SF	$ 2.36	3,300	$ 7,788.00
	Remove accumulated sediments (non-contaminated) - dam pilot channel	CY	$ 11.81	136,970	$ 1,617,616.00
	Remove accumulated sediments (non-contaminated) - reservoir dredging	CY	$ 7.09	3,270,003	$ 23,184,322.00
	Remove accumulated sediments (non-contaminated) - Mob/Demob	LS	$ 118,077.00	2	$ 236,154.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	195,052	$ 1,382,919.00
	Remove contaminated Sediments - Disposal	Ton	$ 70.00	390,104	$ 27,307,280.00
Salvage	Salvage	LS	$ (47,350.00)	1	$ (47,350.00)
	Apply erosion control measures - silt fence	LF	$ 5.00	19,000	$ 95,000.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	3,304,033	$ 26,432,264.00
	Grading and surface preparation amendments	ACRE	$ 6,700.00	700	$ 4,690,000.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	6,420	$ 2,139,979.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	53,720	$ 2,929,352.00
	Habitat Restoration - Seeding	Acre	$ 3,100.00	929	$ 2,879,900.00
	Habitat Restoration - Planting	Acre	$ 3,072.00	465	$ 1,428,480.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 150.00	6,667	$ 1,000,050.00
	Fish Passage w/ sea lamprey control	VLF	$ 50,000.00	9	$ 450,000.00
	Concrete Weir Installation	CY	$ 5,050.00	300	$ 1,515,000.00
	Subtotal				**$ 104,278,812.00**
Project Indirect	Owner's Cost				$ 11,545,730.00
	Baseline Studies, Engineering and Permitting				$ 3,094,004.00
	Construction Management, Biological Monitoring and O&M				$ 1,539,431.00
Contingency	Cost Contingency				$ 10,427,882.00
Total Project Costs	**Total**				**$ 130,885,859.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

C-4 CROTON DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Croton Hydroplant
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	Unit	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove power cable between powerhouse and MTB No. 1	LF	$ 71.00	1,000	$ 71,000.00
Decommissioning and Demolition	Remove security fencing	LF	$ 2.36	1,300	$ 3,068.00
	Remove storage building	LS	$ 10,000.00	1	$ 10,000.00
	Remove office/storage building	LS	$ 94,462.00	1	$ 94,462.00
	Remove plant access road	STA	$ 590.00	10	$ 5,900.00
	Remove septic tank / drain field	LS	$ 11,808.00	1	$ 11,808.00
	Remove piezometers	EACH	$ 2,362.00	8	$ 18,896.00
	Remove all powerhouse equipment	LS	$ 265,954.00	1	$ 265,954.00
	Demolish and remove powerhouse turbine bay including intake/tailrace, retaining walls, and aprons	LS	$ 1,093,075.00	1	$ 1,093,075.00
	Demolish and remove powerhouse generator hall	CY	$ 207.00	5,380	$ 1,113,660.00
	Demolish and remove spillway including concrete weir and apron.	LS	$ 2,935,154.00	1	$ 2,935,154.00
	Drain 1,209-acre reservoir	LS	$ 1,170,076.00	1	$ 1,170,076.00
	Demolish/remove entire earth dam and core wall - excavation	CY	$ 14.64	33,000	$ 483,120.00
	Demolish/remove entire earth dam and core wall - reinforced concrete demo	CY	$ 207.00	500	$ 103,500.00
	Demolish/remove entire earth dam and core wall - sheet piling removal	SF	$ 2.36	3,900	$ 9,204.00
	Remove accumulated sediments (non-contaminated) - dam pilot channel	CY	$ 11.81	136,970	$ 1,617,616.00
	Remove accumulated sediments (non-contaminated) - reservoir dredging	CY	$ 7.09	3,847,062	$ 27,275,670.00
	Remove accumulated sediments (non-contaminated) - Mob/Demob	LS	$ 118,077.00	2	$ 236,154.00
Abatement and Regulated Material Removal	Remove contaminated Sediments - Removal	CY	$ 7.09	195,052	$ 1,382,919.00
	Remove contaminated Sediments - Disposal	Ton	$ 70.00	390,104	$ 27,307,280.00
Salvage	Salvage	LS	$ (47,350.00)	1	$ (47,350.00)
Environmental and Restoration	Apply erosion control measures - silt fence	LF	$ 5.00	19,000	$ 95,000.00
	Apply erosion control measures - riprap protection	CY	$ 150.00	5,000	$ 750,000.00
	Reuse (grading) of non-contaminated excavated & dredged material	CY	$ 8.00	3,880,062	$ 31,040,496.00
	Grading and surface preparation amendments	ACRE	$ 6,700.00	957	$ 6,411,900.00
	Bank Stabilization - Hard Structure	LF	$ 333.33	6,420	$ 2,139,979.00
	Bank Stabilization - Live Stakes & Jute Mat	LF	$ 54.53	53,720	$ 2,929,352.00
	Habitat Restoration - Seeding	ACRE	$ 3,100.00	957	$ 2,966,700.00
	Habitat Restoration - Planting	ACRE	$ 3,072.00	479	$ 1,469,952.00
	Channel creation - Riffle Section at downstream tie in	CY	$ 186.00	13,333	$ 2,479,938.00
	Sea Lamprey Control Structure	LS	$ 1,500,000.00	1	$ 1,500,000.00
	Subtotal				**$ 116,944,483.00**
Project Indirect	Owner's Cost				$ 13,445,581.00
	Baseline Studies, Engineering and Permitting				$ 3,137,303.00
	Construction Management, Biological Monitoring and O&M				$ 1,792,745.00
Contingency	Cost Contingency				$ 11,694,449.00
Total Project Costs	**Total**				**$ 147,014,561.00**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

CONSUMERS ENERGY COMPANY

WEBBER HYDROELECTRIC PROJECT

CONCEPTUAL DECOMMISSIONING COST ESTIMATE
FERC NO. P-2566



Webber Hydroelectric Project

NOVEMBER 2024; REVISED OCTOBER 2025

wsp

WEBBER HYDROELECTRIC PROJECTS

CONCEPTUAL DECOMMISSIONING COST ESTIMATE

CONSUMERS ENERGY COMPANY

PROJECT NO.: US0038224.9874
DATE: OCTOBER 2025

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TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1

2 INTRODUCTION 3

2.1 Webber Dam 3

3 STUDY APPROACH 4

3.1 Assumptions 4

3.2 Limitations 4

4 COST ESTIMATE SUMMARY 6

4.1 Class Estimates 6

4.1.1 Class 5 Estimate 6

4.2 Cost Estimate Summaries 6

4.2.1 Quantities and Unit Costs 6

4.2.2 Uncertainty Areas 7

4.2.3 Webber Dam Cost Estimate Activities 7

4.2.4 Cost Estimate Results Summary 14

BIBLIOGRAPHY 15

TABLES

TABLE 4.1 WEBBER DAM COST ESTIMATE ACTIVITIES BY SCENARIO.....7
TABLE 4.2 WEBBER DAM COST ESTIMATE RESULTS SUMMARY.....14

APPENDICES

A WEBBER DAM HYDROLECTRIC PLANT CONCEPTUAL DECOMMISSIONING COST ESTIMATE

A-1 WEBBER DAM SITE SUMMARY

A-2 WEBBER DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

A-3 WEBBER DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

A-4 WEBBER DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

1 EXECUTIVE SUMMARY

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets. To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added.

This report details the surrendering considerations and pricing considered in the roadmap for Webber Hydroelectric Dam, 1 of the 13 hydropower facilities located within the Grand River Watershed, in Jackson County, Michigan.

Three surrender scenarios with specific assumptions were considered in preparing the cost estimates for each surrender option:

1. Surrender– No-Power Generation: The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.
2. Surrender and Decommission – Partial Removal: The partial removal scenario evaluates partial removal of the dam via reduction of the earthen dam structure with full removal of the powerhouse and generation facilities. This scenario evaluates the potential to leave some form of upstream reservoir system while developing a new weir control structure. This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), not FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys.
3. Surrender and Decommission - Full Removal: The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities and earthen dam structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions.

For the subject facility and scenario, a class 5 cost estimate was prepared in Q4 2022 dollars, identifying and quantifying the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement

and regulated material removal, environmental and restoration work of the Grand River, as well as associated project indirect costs and recommended contingency. Schematics utilized for the evaluation of the Surrender and Decommission – Partial and Full Removal for how the reservoir may be reshaped in the decommissioning restoration are presented. Additional assumptions and limitations by site are presented herein.

2 INTRODUCTION

Consumers Energy Company (Consumers) owns and operates 13 river hydro dam facilities located on the Muskegon, Manistee, Grand, Au Sable, and Kalamazoo Rivers. The average age of these assets is 106 years old and much of each site is original construction and equipment. Consumers would need to start relicensing 11 of the 13 projects with filings signaling their intentions no later than June 30, 2029, meaning a plan for the assets should be in place within the next few years to prepare for filing with Federal Energy Regulatory Commission (FERC). In addition, FERC has recently updated their Part 12 inspection requirements. The revised inspections put more emphasis on Potential Failure Mode Analysis, updated Probable Maximum Flood, and Semi-Quantitative Risk Analysis level 2 effort for each site. These enhanced regulations require subject matter experts and facilitators to complete portions of the work.

Consumers also conducts routine inspections and commissioned studies investigating the overall conditions of the facilities. Although not comprehensive, the assessments indicate the assets are in 'fair' condition but recognizes the current operations as run-of-river is inconsistent with the original peaking designs conceding efficiency and potential generation revenue. The combination of aging assets, increasing regulatory requirements which have resulted in potentially costly upgrades to some of the Project's spillways, system operations, and expected spend on necessary maintenance to keep the plants operating has raised the question of how to extract the best value out of these assets.

To achieve this goal, Consumers hired WSP USA, Inc. (WSP) to prepare the 2023 Hydropower Roadmap (Roadmap) for the 13 hydroelectric dam sites which reviewed Consumers' provided facility reports and analyzed different outcome scenarios and characterized how to achieve them. This Roadmap analyzed six scenarios that included two for relicensing, three for surrendering the license, and one to investigate divesting. Within this pursuit, an additional goal of developing an economic model as a tool to rank the potential outcomes was later added. This report details costs and considerations prepared for the Webber Hydroelectric Dam, 1 of the 13 hydropower facilities located along the Grand River system, Jackson County.

The Grand River system is the second largest river basin in Michigan. It is in the southwestern lower peninsula of Michigan and incorporates 19 counties including Hillsdale, Jackson, Washtenaw, Livingston, Calhoun, Eaton, Ingham, Shiawassee, Gratiot, Clinton, Ionia, Montcalm, Mecosta, Barry, Allegan, Kent, Newaygo, Muskegon, and Ottawa counties. The Grand River watershed drains more than 5,575 square miles of land area, and has 5,320 miles of tributaries flowing directly into the mainstream.

The three surrendering scenarios include:

- Surrender – No-Power Generation
- Surrender and Decommission – Partial Removal
- Surrender and Decommission – Full Removal.

The objective of the conceptual decommissioning cost estimate is to identify the value of the plant's assets and estimate of the cost of utility separation, decommissioning and demolition, abatement and regulated material removal, environmental work, and restoration of the Grand River, as well as associated project indirect costs and recommended contingencies.

2.1 WEBBER DAM

The Webber dam (FERC Project Number P-2566), located in the Grand River in Lyons Township, Iona County, Michigan consists of two 32-foot-high earth embankment dam sections totaling 730 ft in length with a concrete core wall and a 33-foot-high concrete service spillway with ten steel radial gates and a fixed-crest overflow section that discharges to a concrete apron extending 105 feet downstream. The reservoir, with a normal surface area of 660 acres at elevation 684.4 feet (U.S. Geological Survey [USGS] datum), has a gross storage of 6,000 acre-feet.

Additionally, the dam includes a concrete masonry powerhouse with two generating units with a total capacity of 3,250kW as well as a 186-foot long concrete-lined tailrace with retaining walls and a downstream weir. The Michigan Department of Natural Resource currently operates a fishway at the dam.

3 STUDY APPROACH

3.1 ASSUMPTIONS

WSP analyzed the costs for three scenarios involving the surrender of the hydropower facilities before the current license expires. These scenarios include 1) Surrender – No-Power Generation: 2) Surrender and Decommission – Partial Removal; and 3) Surrender and Decommission – Full removal. Detailed description of these alternatives are as follows:

Surrender – No Power Generation Operation

The no-power generation scenario evaluates surrender of the FERC license while not removing the dam structure. The powerhouse and spillway would be modified to maintain safe flows through the system while disconnecting generation equipment. The dam would remain in place and current reservoir levels would be maintained. Additional capital improvements would be required for long term compliance with dam safety regulations.

Surrender and Decommission - Partial Removal

The partial removal scenario evaluates the partial removal of the dam by reducing the earthen dam structure while fully removing the powerhouse and generation facilities. This reduction would create a sufficient breach to pass the 100-year flood through the reestablished river channel, ensuring that the incremental rise at the dam site would be less than 0.10 foot. This scenario also considers the potential to maintain some form of upstream reservoir system while developing a new weir control structure.

This structure would be designed to fall under state regulations (Natural Resources and Environmental Protection Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir and to prevent the proliferation of invasive species such as the sea lampreys. Exposed sediments and newly exposed shoreline would be stabilized and re-vegetated.

Schematics for the partial removal scenario for the dam structure are provided in Appendix A.

Surrender and Decommission - Full Removal

The full removal scenario evaluates the complete removal of the dam and reservoirs. The reservoirs would be drained, powerhouse/generation facilities, earthen dam, concrete spillway, tailrace and retaining structures fully removed, and the upstream channel and floodplain restored to pre-dam conditions. To minimize the transport and improve stabilization of the sediment within the reservoir, the reservoir would be drawn down in a controlled manner. Hydraulic dredging would be performed to approximate the river's original meander to allow the river to re-establish its course through the current reservoir. Contaminated sediments, if present, would be hauled off site and disposed of properly.

Schematics for the full removal scenario for the dam structure are provided in Appendix A.

3.2 LIMITATIONS

- Prior costs provided by Consumers for these scenarios and developed by Kiewit Corporation in 2022, as available, and Mead & Hunt (M&H) in 2021 were used as the foundation of these estimates. Sequencing of work follows the descriptions as detailed by M&H with additional measures incorporated following removal as part of the reservoir restoration. Estimates were supplemented and expanded based on similar experiences from other applicable dam removal projects.
- Information related to sediment volumes and characterization are estimated and assumed based on watershed research for potential hazardous contamination. As no data is available at this time, there is significant risk associated with the uncertainty to the volumes and level of contamination for management. Unless documentation of known hazardous spills were identified for the watershed, it was considered as a mix of non-

contaminated and contaminated non-hazardous sediments for removal and disposal, as detailed herein. Sediment investigations would occur after a decision to surrender and decommission were approved.

- These estimates are based on Q4 2022 dollars at the time of preparation.
- Cost estimates, by nature, are as best as the information available at the time of preparation. Estimates should be reconsidered and updated as new information is obtained and as market conditions change.
- Additional assumptions and limitations considered for each cost item to derive the presented unit pricing and quantity are detailed herein.

4 COST ESTIMATE SUMMARY

4.1 CLASS ESTIMATES

Although hydropower costs are highly site-specific with many factors contributing to cost uncertainty, costs accuracy is generally assumed to increase as project development nears completion. As such construction stage cost estimates are necessarily considered the most accurate and are quantitatively defined as such by Association for the Advancement of Cost Engineering (AACE). The level of information or considerations prepared for this independent evaluation, with limitations, would be considered as Class 5 estimate per AACE.

4.1.1 CLASS 5 ESTIMATE

This is known as the rough order of magnitude (ROM) estimate. It is used for the initial screening projects for capital expenditure planning. Since several projects are initially available, estimating each would require a tremendous amount of time and effort. Given the limited preparation, ballpark figures are usually accepted to make business plan projections. Class 5 estimates are drawn from limited information which is about 0 to 2% of the project definition. The information may be nothing more than a basic description of the plant or process, capacity, and location. That is why its accuracy ranges -50% on the low side and +100%on the high side.

Class 5 cost estimate accuracy range: -50% to +100%

Stochastic cost estimating methods are used for obtaining a Class 5 estimate. Examples of these are cost/capacity curves, rule of six-tenths, Lang factor method, scale of operation factors, and cost indices. These techniques use parametric cost estimation methods to deduce the total cost of a given project.

4.2 COST ESTIMATE SUMMARIES

Costs for each surrender scenario were calculated for (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. Detailed descriptions for each item under each scenario are provided below.

All units used in the cost estimate are U.S. Standard and all costs are in US Dollars (4th Quarter 2022 levels) if prepared by WSP. Pricing evaluated and utilized by the previous studies are based on costs at the time of their preparation (e.g. 2021 and early 2022). No price escalation was applied due to proximity in date of preparation and class 5 level estimate being prepared. The conceptual decommissioning cost estimates for each scenario for the subject dam are included in Appendix A.

4.2.1 QUANTITIES AND UNIT COSTS

Quantities of pieces of equipment and/or bulk material commodities used in the cost estimates were intended to be reasonable and representative of projects of this type. Material quantities were prepared by M&H in 2021 for categorial items included within their estimate. As appropriate, WSP simplified unit measurements and unit pricing for subject activities. For additional activity items incorporated by WSP, quantities were estimated from the schematic renderings prepared for the subject site and included within Appendix A, as detailed below. Upon determining corrective unit quantities and unit costs, cost components for each activity were determined by the multiplication of the unit quantity by unit cost, rounded to the nearest whole dollar.

4.2.2 UNCERTAINTY AREAS

This estimate will be based on similar experiences from other projects. Therefore, some specific information about the site is unknown. Additional studies would be needed to determine physical and chemical characteristics of soils and sediments, potential costs required to manage and dispose of potentially contaminated sediments upstream of the structures, type of vegetation and presence of non-native species, archaeological resources and historic structures, hydrology and hydraulic characteristics, as well as ecology and biology upstream and downstream of the structures.

4.2.3 WEBBER DAM COST ESTIMATE ACTIVITIES

Table 4.1 provides an outline of estimate cost activities and which activities apply to each scenario. Each activity is associated with the following categories: (1) Utility Separation, (2) Decommissioning and Demolition, (3) Abatement and Regulated Material Removal, (4) Salvage (asset recovery), (5) Environmental and Restoration, (6) Project Indirect, and (7) Contingency. A description of each activity and what is considered in deriving the unit price and quantity by scenario are detailed below.

Table 4.1 Webber Dam Cost Estimate Activities by Scenario

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	Remove Substation		X	X
	Remove Lines from Plant to Substation		X	X
Decommissioning and Demolition	Leave Powerhouse Intact	X		
	Remove Security Fencing		X	X
	Remove Plant Access Road		X	X
	Remove Septic Tank/Drain Field		X	X
	Remove Piezometers		X	X
	Remove All Powerhouse Equipment		X	X
	Remove or Lay Up Equipment	X		
	Demolish and Remove Concrete/Masonry		X	X
	Remove Trash Racks		X	X
	Remove Gates		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Decommissioning and Demolition	Demolish and Remove Concrete		X	X
	Remove Gates		X	X
	Remove Walkway and Hoist Rails		X	X
	Remove Hoists		X	X
	Drain 660-Acre Reservoir		X	X
	Remove Earth Dam: Excavation			X
	Remove Portion of Earth Dam: Excavation		X	
	Remove Earth Dam: Concrete Demolition			X
	Remove Portion of Earth Dam: Concrete Demolition		X	
	Modify Spillway to Maintain Flow/Pond Level	X		
	Dam Pilot Channel		X	X
	Remove Accumulated Non-Contaminated Sediments		X	X
	Mobilization/Demobilization		X	X
Abatement and Regulated Material Removal	Remove Contaminated Soil		X	X
	Disposal of Contaminated Soil		X	X
Environmental and Restoration	Reuse (Grading) of Non-Contaminated Excavated & Dredged Material		X	X
	Grading & Surface Preparation/Amendments		X	X
	Channel Creation - Riffle Section at Downstream Tie-In		X	X
	Seed Former Reservoir Bottom		X	X

CATEGORY	COST ACTIVITY	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Environmental and Restoration	Plant Former Reservoir Bottom		X	X
	Concrete Weir Installation		X	
	Fish Passage		X	
	Apply Erosion Control Measures: Silt Fence		X	X
	Apply Erosion Control Measures: Rip Rap Protection		X	X
	Bank Stabilization - Hard Structure		X	X
	Bank Stabilization - Live Stakes and Jute Matting		X	X
	Salvage Value		X	X
	Owner's Cost	X	X	X
	Baseline Studies, Engineering and Permitting	X	X	X
	Construction Management, Biological Monitoring, And O&M	X	X	X
	Contingency	X	X	X

Remove Substation

Lump sum cost was taken from the M&H cost estimate. The substation would no longer be necessary as the facility would no longer produce electricity under the partial and full removal scenarios, therefore, the substation would be removed.

Remove Lines from Plant to Substation

Cost per linear foot was taken from the M&H cost estimate. The buried cable from the powerhouse to the substation would no longer be required under the partial and full removal scenarios, so it would be removed.

Leave Powerhouse Intact

Lump sum cost was taken from the M&H cost estimate. The powerhouse structure would be left in place under the non-power operation option. Once the electrical generating equipment had been removed, water intake into the power plant would be plugged with concrete and the power conduits beneath the powerhouse would be filled with sand.

Remove Security Fencing

Price per linear foot was taken from the M&H estimate. Security fencing for the facility would be removed and disposed of offsite as part of the partial and full removal scenarios.

Remove Plant Access Road

Price per station (100-feet-per-station) was taken from the M&H estimate. Under the partial and full removals, the access road to the powerhouse would no longer be necessary. Work includes approximately 2-station of the access road to be removed.

Remove Septic Tank/Drain Field

Lump sum cost was taken from the M&H estimate. For both the partial and full removal, work includes the removal of the plant's septic tank and drain field with contaminated material disposed offsite.

Remove Piezometers

Price per each was taken from the M&H estimate. For both the partial and full removal, the embankment dam would no longer impound the reservoir and all 7 of the project piezometers would be either excavated and removed or abandoned and capped below grade.

Remove All Powerhouse Equipment

Lump sum cost was taken from the M&H estimate. Under the partial and full removal options, all the plant electromechanical equipment, controls, protection, and station transformers would be removed from the powerhouse during its demolition and transported to an off-site disposal area.

Remove or Lay Up Equipment

Lump sum cost was taken from the M&H cost estimate. Under the non-power operation option, the turbine-generator would be disabled, and all the equipment related to the generation of electricity would be decommissioned and laid-up in the powerhouse. This includes the draining and removal of petroleum-based products from hydraulic systems and operators, as well as chlorofluorocarbons (" CFC's") and other hazardous materials.

Demolish and Remove Concrete/Masonry - Powerhouse

Price per cubic yard was taken from the estimate by M&H. Under the partial and complete removal scenarios, concrete and masonry associated with the dam and powerhouse structure will no longer be necessary and will be removed.

Remove Trash Racks

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, trash racks will no longer be necessary and will be removed.

Remove Gates – Powerhouse

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, gates will no longer be necessary in the powerhouse and will be removed.

Demolish and Remove Concrete - Spillway

Price per cubic yard was taken from the estimate by M&H. Under the partial and complete removal scenarios, concrete associated with the spillway will be demolished and removed and will be removed.

Remove Gates - Spillway

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, gates in the spillway will no longer be necessary and will be removed.

Remove Walkway and Hoist Rails

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, walkways and hoist rails will no longer be necessary and will be removed.

Remove Hoists

Cost per ton was taken from the M&H estimate. Under the partial and complete removal scenarios, hoists will no longer be necessary and will be removed.

Drain Reservoir

Lump sum cost provided from M&H cost estimate. Under the partial and complete removal options, the reservoir would be drained in a controlled manner through the powerhouse and spillway during removal of the powerhouse structure. The removal will be staged and the effect of lowering the reservoir on project wetlands will be monitored monthly throughout the process. Removal of the spillway will require the installation of a temporary cofferdam.

Remove Earth Dam: Excavation

Cubic yard unit price was taken from the M&H estimate. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Remove Portion of Earth Dam: Excavation

Cubic yard unit price was taken from the M&H estimate for a similar structure. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This activity accounts for the earth material excavation, which is considered to stay onsite for reuse above the restored floodplain.

Remove Earth Dam: Concrete Demolition

Cubic yard unit price was taken from the M&H estimate for a similar structure. Under the full removal option, the embankment dam and core wall would be removed entirely. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Remove Portion of Earth Dam: Concrete Demolition

Cubic yard unit price was taken from the M&H estimate for a similar structure. Under the partial removal option, the embankment dam and core wall would be removed to provide a breach of sufficient size to pass the 100-year flood without causing an incremental rise of more than 0.10 foot through the project site. This item includes the demolition of reinforced concrete associated with this removal. This activity accounts for the concrete demolition portion of the removal with all material disposed of offsite.

Modify Spillway to Maintain Flow/Pond Level

Lump sum cost was taken from the M&H estimate. M&H scope of work for this cost activity detail modifications to the operation of the gated spillway would be made to allow the regulation of releases from the impoundment like those that had occurred during generating operations to maintain normal reservoir operating levels. The modified operations would allow continued releases during normal and project flood conditions.

Dam Pilot Channel

Cubic yard unit price by WSP, derived from comparable projects. For both the partial and full removal, a 200-foot-wide pilot channel would be developed to approximate the river's original meander to allow the river to reestablish its course through the reservoir. This will be conducted during the drawdown process of the reservoir lowering. All material is considered non-contaminated and reused onsite following removal of the dam.

Remove Accumulated Non-Contaminated Sediments

Cubic yard unit price was taken from the M&H estimate. It is assumed that the 200-foot-wide main channel will be re-established with limited dredging. According to M&H's opinion, approximately 1,008,390 cubic yards of material will need to be removed to clear fine-grain sediments and re-establish the channel where necessary beyond the pilot channel. This amount is prorated at 66% to account for limited dredging within the new impoundment for the partial removal.

Remove Contaminated Soil

Cubic yard unit price was taken from the M&H estimate. Consideration of dredging operation only for removal and loading into a disposal truck of an initial layer of contaminated non-hazardous sediments at the onset of removal. Quantity considers a 12-inch layer of non-hazardous contaminated materials is removed from 10% of the reservoir area for disposal at a registered landfill accepting non-hazardous sediments for both the partial and full removal scenarios.

Disposal of Contaminated Soil

Unit cost consideration for transportation and disposal fee of non-hazardous contaminated sediments at an offsite facility accepting material.

Reuse (Grading) of Non-Contaminated Excavated & Dredged Material

WSP added cost for site grading of excavated and non-contaminated sediments to remain onsite. Following decommissioning of the dam and dredging of the sediments, this activity would account for the additional handling/spreading of sediments above the restored floodplain to displace and then permanently stabilize materials (accounted for in other cost activities) onsite.

Grading & Surface Preparation/Amendments

WSP added cost for grading and surface preparation/amendments for newly exposed sediments within the reservoir for floodplain restoration.

Channel Creation - Riffle Section at Downstream Tie-In

This item involves the placement of river rock along a portion at the downstream limits of work for the riffle bed reconstruction. It is assumed that the riffle section will be 200-feet-wide, 1,000-feet-long, and 2-feet-deep for the partial and full. The river rock will be strategically placed to enhance the stability and functionality of the riffle, promoting better water flow and habitat conditions.

Mobilization/Demobilization

Lump sum cost taken from M&H estimate. Work includes mobilization and demobilization of hydraulic dredging operation for all sediment removal work.

Seed Former Reservoir Bottom

WSP derived cost for providing permanent seeding of restored reservoir and dam area for stabilization of sediment/soils and reservoir restoration.

Plant Former Reservoir Bottom

WSP derived cost for providing riparian reforestation along the restored channel system. Quantity assumed 100% of the seeded areas for both the partial and full removal are planted at a 480 stem per acre with No. 2 container tree and shrubs.

Concrete Weir Installation

WSP derived costs for the partial removal scenario. This structure would be designed to fall under state regulations (Act (NREPA), Part 315, Dam Safety), rather than FERC regulations. Structures would be approximately six feet in height to be defined as the lowest hazard classification potential feasible by location while achieving the goal of maintaining some form of upstream reservoir. Unit pricing considers as pile supported reinforced concrete structure with a 9-foot-height (6-foot drop and 3-foot-footer) and 4-foot-width.

Fish Passage

WSP added cost. A fish ladder is already in place at Webber Dam so a new structure would only be necessary under the partial removal scenario. Unit quantity was derived based on water surface variation from upstream to downstream for vertical linear foot of passage necessary. Under the partial removal scenario, a 9-vertical-foot drop in water height was considered after removal of the existing dam and construction of the concrete weir to maintain small amounts of upstream ponding.

Apply Erosion Control Measures: Silt Fence

Price per linear foot and unit quantity derived WSP project experience. Work includes temporary silt fence implemented within the reservoir during dam removal and reservoir restoration until the site is stabilized and completed.

Apply Erosion Control Measures: Rip Rap Protection

WSP developed price and quantity for temporary riprap used for temporary stabilization activities during dam removal for both the partial and full removal scenarios.

Bank Stabilization - Hard Structure

WSP added cost for provided reinforced banks (riprap) for stabilization of the restored channel through the reservoir. Quantity assumes 15% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Grand River.

Bank Stabilization - Live Stakes and Jute Matting

WSP added cost for provided bank stabilization of restored channel systems with live stakes and jute matting of the restored channel through the reservoir. Quantity assumes 85% of both banks of the restored linear footage of the main channel system depicted in the schematics presented in Appendix A for the Grand River, as well as both banks for all tributary lengths.

Salvage Value

Lump sum cost derived from M&H estimate for salvage pricing as detailed in the M&H estimate report. Due to its lower salvage value at the time of their estimate and the level of this cost estimate, pricing for updated market value in salvage rates was not evaluated/applied as it was expected to rebound, which would reduce overall costs considered.

Owner's Cost

An owner's cost of 15% of the construction subtotal, less contaminated sediment disposal, was applied to each scenario to cover Consumers costs in project management and indirect costs for implementing the surrender scenario.

Baseline Studies, Engineering and Permitting

This project indirect covers costs for an engineering firm to perform the baseline studies (environmental investigations and sampling, surveys, hydraulic modeling, etc.) required for the scenario, prepare an associated design and bid package and obtaining required regulatory. Support and developing studies to obtain FERC approval for surrendering are also considered within this project indirect.

For the non-power scenario, 3.5% of the construction subtotal with an additional $5,000 for environmental surveys of structures, $253,547 for the environmental/social impact study (prepared by M&H for the non-power evaluation) were applied.

For the partial removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) with an additional $400,000 for a concrete weir and fish ladder design were applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

For the full removal scenario, 3.5% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) was applied. It is assumed the price for the environmental/social impact study would be captured within the 3.5% of the construction subtotal.

Construction Management, Biological Monitoring, And O&M

This item is variable by scenario. This project indirect captures costs associated with an engineering firm providing construction management and biological monitoring, as well as post construction monitoring, as needed, associated with the surrender scenario. For the non-power scenario, 10% of the construction subtotal was applied and assumes no biological monitoring or post construction monitoring activities would be required. For the partial and full removal scenarios, 2% of the construction subtotal (less contaminated sediment disposal due to its volatility of occurrence and price) were applied. These costs may be variable as the design develops and permit stipulations are identified.

Contingency

A contingency of 10% was applied on the subtotal of work (excluding project indirect costs) based on the scale and class of the cost estimate with the associated risks and uncertainties based on available (and lack of) data pertaining to sediments.

4.2.4 COST ESTIMATE RESULTS SUMMARY

The full conceptual decommissioning cost estimate for the subject site under each scenario is provided in Appendix A. Table 4.4 provides a summary of the total cost by category.

Table 4.22 Webber Dam Cost Estimate Results Summary

DESCRIPTION	NON-POWER OPERATION	PARTIAL REMOVAL	FULL REMOVAL
Utility Separation	-	$74,390	$74,395
Decommissioning and Demolition	$497,728	$12,342,410	$14,298,560
Abatement and Regulated Material Removal	-	$13,622,094	$13,622,094
Salvage	-	($59,129)	($59,129)
Environmental and Restoration	-	$17,683,734	$19,945,443
Subtotal	**$497,728**	**$43,663,499**	**$47,881,363**
Project Indirect	$400,401	$6,713,253	$7,177,915
Contingency Cost	$49,773	$4,366,350	$4,788,137
Total Project Cost	**$947,902**	**$54,743,102**	**$59,847,415**

Note: Variation between totals in the estimates shown in this report and the April 2024 Road Map are due to the following:

1. Leave Powerhouse Intact was not included in the summation of the subtotal from the Non-Power Operation in the 2023 Hydropower Roadmap estimate.
2. Rounding of quantities to the next whole integer were applied in the estimates herein.
3. Verifications of quantity by unit price to equate to WSP Opinion of Costs, rounded to the next whole dollar were applied in the estimates herein.

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APPENDIX

A WEBBER DAM HYDROELECTRIC PLANT CONCEPTUAL DEMOLITION COST ESTIMATE

A-1 WEBBER DAM SITE SUMMARY

Site Characteristics

- Two, 32-foot-high earth embankment dam sections, each with a concrete core wall and totaling 730 feet in length.
- A 33-foot-high concrete spillway with ten steel radial gates and a fixed-crest overflow section which discharge to a concrete apron extending approximately 105 feet downstream.
- A reservoir with a normal surface area of 660 acres at elevation 684.4 feet (U.S. Geological Survey [USGS] datum) and a gross storage of 6,000 acre-feet.
- A concrete and masonry powerhouse containing two generating units with a total installed capacity of 3,250 kilowatts (kW).
- A 186-foot-long concrete-lined tailrace with retaining walls and downstream weir.
- Associated appurtenant structures.
- Fish ladder owned and operated by Michigan DNR (not in FERC license)
- Canoe portage trail around west side of dam.
- One to two dozen private residences/docks on reservoir



Relicensing Issues

- Major license (referenced in License Order, subject to form L-3)
- Considerable fisheries resource issues
- Considerable Public Recreation Facilities
- Limited private property adjacent to shoreline

Future License Conditions

- Operations monitoring/automation
- Recreation monitoring or enhancements
- RTE and Wildlife Species Management Plans
- Invasive vegetation monitoring plan
- Fish stocking/funding
- Recreation enhancements (portage improvements, paddler trail opportunities)
- Land/Shoreline Management
- Historic Properties Management Plan
- Operational restrictions (run-of-river monitoring, seasonal shutdowns)
- Seasonal shutdown (April) for downstream salmonid smolt migration

Risks to Operating under another 50-year License

- Invasive fish passage if downstream barriers are removed
- Continued responsibility to meet regulatory requirements.
- Continued responsibility to operate and maintain the equipment, powerhouse, dam, and mitigation measures like recreation sites
- Unforeseen changes in restrictions in dam safety regulations/requirements

Condition Assessment Reports

POWERHOUSE

Based on the Technical Memorandum dated April 27, 2022, titled “Webber Hydroelectric Dam 2021 Powerhouse Condition Assessment Results Memo,” The exterior and interior powerhouse structure was given a 'Green' rating, indicating that that major repair will not be needed for about 10 to 20 years. While no immediate major repairs are required, additional maintenance and monitoring is recommended to prevent further need for repairs.

OTHER STRUCTURES

The Phase 2 (Visual and Non-Destructive Testing) condition assessment was completed by Golder on September 28 and 29, 2018 and consisted of the above-water concrete features/structures (Downstream Left Embankment Retaining Wall Segments 1 and 2, Downstream Powerhouse Piers, Downstream Right Embankment Retaining Wall, Downstream Spillway Apron (Exposed), Downstream Triangle, Fish Ladder, Fixed Crest Spillway, Left Wing Wall/Abutment, Right Wing Wall/Abutment, Spillway Abutment, Spillway, Piers, and Weir - Left

Segment and Right Segment, Training Wall Segments 1 and 2, Upstream Spillway Piers, Upstream Triangle).

The key findings from the Webber condition assessment identified one site feature (segment 2 of the training wall) that was rated as ORANGE (1 to 3 years before major repairs or replacement is necessary). One site feature (segment 1 of the training wall) was rated as BLUE (5 to 10 years before major repairs or replacement is necessary). Continued monitoring of segment 2 of the left embankment retaining wall is recommended to determine if the movement noted during the inspection is on-going. In addition, periodic maintenance including cleaning and sealing of the joints in the downstream left embankment retaining wall, fixed crest spillway and between the spillway abutment and left embankment retaining wall is recommended. Other structures that were inspected during this condition assessment and are included in this report were given a Green rating (10 to 20 years before major repairs or replacement is necessary).

DIVE INSPECTIONS

- July 20-21 and September 28, 2022:
    - The underwater portions of the Webber Hydroelectric Dam were in overall good condition. All features/structures were given a green rating, indicating that that major repair will not be needed for about 10 to 20 years. Deficiencies were limited to spalling, concrete aggregate pop-outs, minor to moderate cracking, surface scaling/erosion, and concrete surface flaking.
    - Additional underwater monitoring is recommended every 5 years. Continued removal of debris from the upstream powerhouse trash racks and spillway is also recommended.

FERC Part 12 Process

COMPREHENSIVE ASSESSMENT VS. PERIODIC INSPECTION – IMPACT ON COSTS:

The new Part 12 process replaces a program that previously included one type of inspection being performed on a five-year cycle. The new Part 12 process now includes two types of inspections, alternating on the same 5-year cycle. The first type, called a Periodic Inspection (PI), is described by FERC as a "performance-focused" inspection of project features. The second type, called a Comprehensive Assessment (CA), is described by FERC as a "deep dive" into the project with a project team of experts participating as part of the process. While FERC has generically stated that the CA will be more involved than the traditional Part 12 process, we have reason to expect that Owners may have to spend $250k to $500k to conduct a comprehensive assessment.

CURRENT PART 12 RECOMMENDATIONS:

Based on a review of recommendations in the most recent Part 12 Report, most recommended repairs and/or studies are minor in nature and will not require as significant amount of capital to implement. The exception to this is the potential for repair of the tumble bay slab pending the study to determine the mechanism causing voids.

Current Remediation Projects in LTFP

- Unit 1 Overhaul and Generator Rewind – Capital
- Left Downstream Spillway Abutment Wall Replacement – Capital

- Unit 2 2400V Switchgear Replacement – Capital
- Unit 1 Concrete Repairs – O&M

Remediation Projects not in LTFP

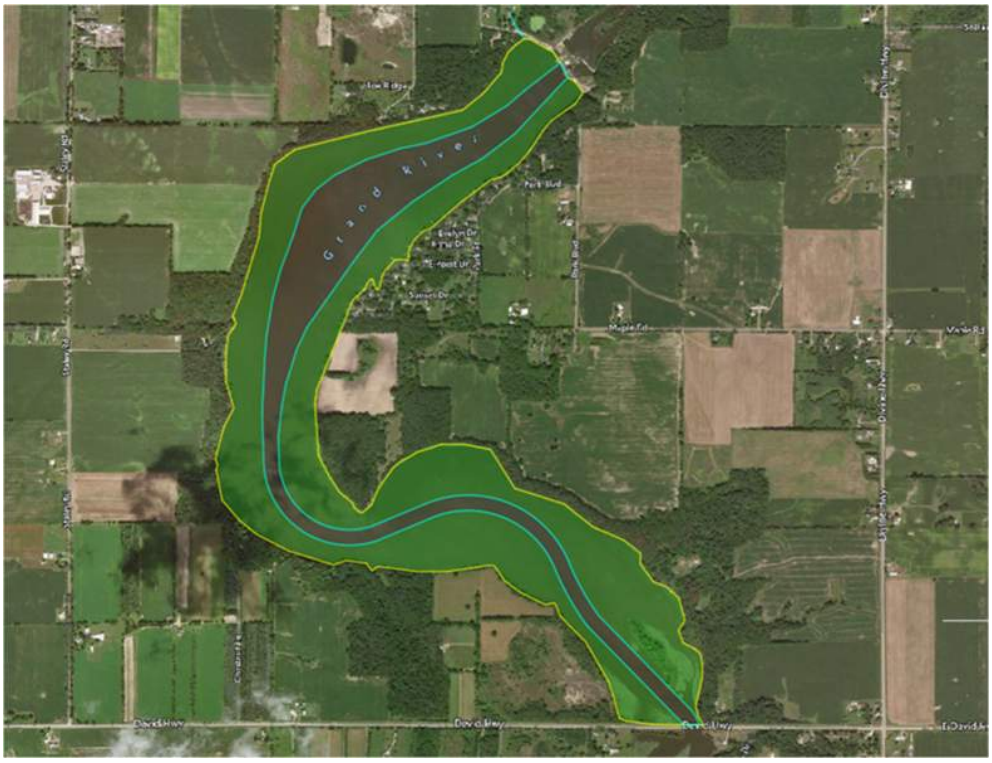
- Upstream Triangle Concrete Wall Remediation
- Right Embankment Toe Seepage Repair
- Core Wall Extension
- Unit 2 Bolt Replacement
- Draft Tube Concrete Repairs
- Downstream Powerhouse Pier Concrete Repairs
- Unit 2 Concrete Repairs

Generation

The Webber development consists of 2 units with a calculated maximum generation capacity of 37,668 MWH. Based on the Hydro Optimization report dated June 30, 2020, the average annual generation from 2011 to 2019 was 11,271 MWH, contributing 3% of the total generation from all 13 dam sites. With remediation, the average annual generation can be increased to 18,900 MWH.

Surrendering (projected to 2041 at end of licensing period and following FERC decommissioning process)

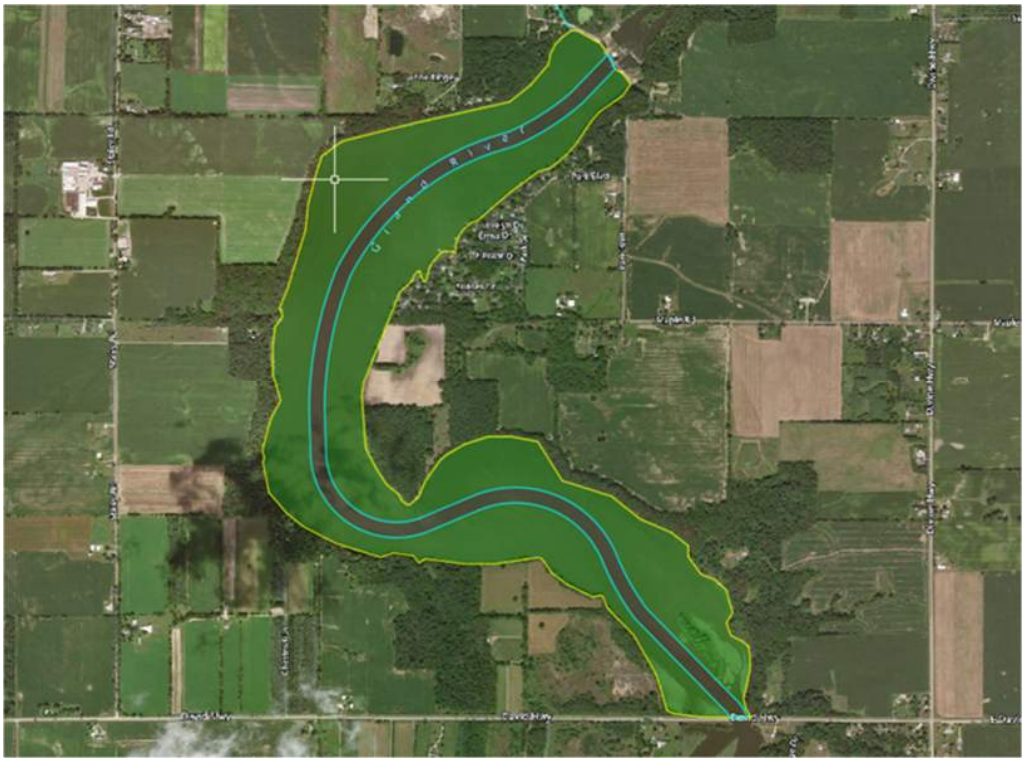
Decommissioning (Partial)



- Pros
  - Reduces legal liability and maintenance of existing facilities.
  - Fish ladder already installed.
  - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.
- Cons/Risks
  - This option will require significant coordination with regulatory agencies and external stakeholders due to changes in land use, majority of surrounding property is residential
  - New fish passage installation required.
  - May also still cause sediment transport issues.
  - Public disapproval of this option due to its socioeconomic and recreational impact (does not solve issue of poo portage for anglers and recreational boaters and paddlers).

- May serve as sea lamprey barrier with recent removal of Lyons Dam and potential removal of the partially failed Wager Dam downstream.
- Endangered unionid mussels at dam impoundment and tailwaters may be impacted by dam removal.
- Sediment release from removal may impact restoration conducted for Lyons Dam removal and potential Wager Dam removal downstream
- Impoundment may buffer water quality impacts associated with extensive upstream development, agriculture, septic issues, and point sources.
    - Potential for contaminated sediment removal and disposal will add significant cost burden.
- Consumers is evaluating the installation of a 6 FT weir as part of the partial removal option in order to maintain a portion of the reservoir for recreational use. It is WSP's opinion that under present day Michigan law, such a dam structure would be classified as having a LOW HAZARD POTENTIAL because its failure may cause damage limited to isolated inhabited homes, agricultural buildings, structures, secondary highways, short line railroads, or public utilities, where environmental degradation may be significant, or where danger to individuals exists.

Decommissioning (Full)



- Pros
    - Eliminates legal liability and maintenance of existing facilities.
    - Fish ladder already installed.
    - Mitigates many of the regulatory requirements associated with existing spillway & reservoir.

  - Eliminates responsibility to maintain and operate the powerhouse and aging dam and other associated structures.
  - Habitat can be restored along the entire footprint of the dam.
  - Eliminates sediment transport issues
  - Improved portage for anglers and recreational boaters and paddlers. A new boat launch downstream of Webber Dam is desired by the community now that the downstream Lyons Dam has been removed, but full removal of Webber may solve this issue.
- Cons/Risks
  - Significant coordination with regulatory agencies and external stake holders on potential changes in land use, riparian ownership, and aquatic habitat within the reservoir.
  - Public disapproval of this option due to its socioeconomic and recreational impact.
  - May serve as sea lamprey barrier with recent removal of Lyons Dam and potential removal of the partially failed Wager Dam downstream.
  - Endangered unionid mussels at dam impoundment and tailwaters may be impacted by dam removal.
  - Sediment release from removal may impact restoration conducted for Lyons Dam removal and potential Wager Dam removal downstream
  - Impoundment may buffer water quality impacts associated with extensive upstream development, agriculture, septic issues, and point sources.
    - Potential for contaminated sediment removal and disposal will add significant cost burden.

License Surrendering (Non-Power Operation)

- Pros
  - Lower initial cost burden
  - Maintain existing reservoir for recreational use. This option will likely be associated with the least public resistance as it will have the least immediate socioeconomic and recreational impact.
  - Contaminated sediments do not need to be removed and transported offsite.
  - Fish ladder already installed.
  - No disturbance to endangered unionid mussels found in dam impoundment and tailwaters.
  - Serves as sea lamprey barrier if partially failing Wager Dam is removed downstream.
- Cons/Risks
  - Legal liability associated with facilities and equipment surrendered in place. The dam structure and spillway will need to comply with all current and future FERC regulations that are required for surrender.
    - Future repairs to dam structure.
  - Transport of sediment and woody debris is also not improved through this option.

Divesting

Relicensing decision is further out than the Au Sable, Manistee, and Muskegon River projects. Putting this project on the market as part of a large portfolio is a near term action that can inform the next decisions. There is time before having to make a decision on relicensing or surrender.

A-2 WEBBER DAM NO-POWER GENERATION SCENARIO CONCEPTUAL ESTIMATE

Comsumers Hydropower
Webber Dam
Decommissioning Cost Evaluation

Category	Cost Activity	WSP Unit Cost	Quantity	WSP Opinion of Cost
Decommisioning and Demolition	Leave powerhouse intact	$ 320,606.00	1	$ 320,606.00
	Remove or lay up equipment	$ 88,564.00	1	$ 88,564.00
	Modify spillway to maintain flow/pond level	$ 88,558.00	1	$ 88,558.00
Environmental and Restoration	Installation of fish passage	$ 50,000.00	0	$ -
	Subtotal			**$497,728**
Project Indirect	Owner's Cost			$74,660.00
	Baseline Studies, Engineering and Permitting			$275,968.00
	Construction Management, Biological Monitoring, and O&M			$49,773.00
Contingency	Contingency			$49,773.00
	Total			**$947,902**

Notes:
1. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database.

A-3 WEBBER DAM PARTIAL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Webber Dam
Decommissioning Cost Evaluation - Partial Removal

Category	Cost Activity	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove Substation	$ 60,190.00	1	$ 60,190
	Remove lines from plant to substation	$ 71.00	200	$ 14,200
Decomissioning and Demoliton	Remove security fencing	$ 2.00	500	$ 1,000
	Remove plant access road	$ 590.00	2	$ 1,180
	Remove septic tank/drain field	$ 11,808.00	1	$ 11,808
	Remove piezometers	$ 2,362.00	7	$ 16,534
	Remove all powerhouse equipment	$ 256,625.00	1	$ 256,625
	Demolish and remove concrete/masonry	$ 207.00	6400	$ 1,324,800
	Remove trash racks	$ 5,297.00	20	$ 105,940
	Remove Gates - Powerhouse	$ 264.84	59	$ 15,626
	Demolish and remove concrete	$ 207.00	9350	$ 1,935,450
	Remove gates - Spillway	$ 264.84	60	$ 15,891
	Remove walkway and hoist rails	$ 17,214.00	65	$ 1,118,910
	Remove hoists	$ 4,237.00	16	$ 67,792
	Drain 660-acre reservoir	$ 1,452,145.00	1	$ 1,452,145
	Demolish/remove portion earth dam, core wall and emergency spillway: excavation	$ 14.64	9605	$ 140,618
	Demolish/remove portion earth dam, core wall and emergency spillway: concrete demolition	$ 207.00	90	$ 18,730
	Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	$ 7.09	136970	$ 971,118
	Remove accumulated sediments (non-contaminated): Reservoir dredging	$ 7.09	675621	$ 4,790,156
	Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	$ 98,087.00	1	$ 98,087
Abatement and Regulated Material Removal	Contaminated Sediments - Removal	$ 7.09	106480	$ 754,944
	Contaminated Sediments - Disposal	$ 70.00	183816	$ 12,867,150
Environmental and Restoration	Channel creation - Riffle Section at downstream tie in	$ 150.00	14815	$ 2,222,250
	Reuse (grading) of non-contaminated excavated & dredged material	$ 8.00	822196.3	$ 6,577,571
	Grading & surface preparation/amendments	$ 6,700.00	293	$ 1,963,100
	Seed former reservoir bottom	$ 3,100.00	293	$ 908,300
	Plant former reservoir bottom	$ 3,072.00	293	$ 900,096
	Concrete weir installation	$ 5,050.00	200	$ 1,010,000
	Installation of Fish Passage	$ 50,000.00	9	$ 450,000
	Apply Erosion Control Measures: Silt Fence	$ 5.00	22000	$ 110,000
	Apply Erosion Control Measures: Rip Rap Protection	$ 150.00	5000	$ 750,000
	Bank Stabilization - Hard Structure	$ 333.33	4347	$ 1,449,086
	Bank Stabilization - Live stakes and Jute Matting	$ 54.53	24635	$ 1,343,331
Salvage	Salvage Value	$ (59,129.00)	1	$ (59,129)
	Subtotal			**$43,663,499**
Project Indirect	Owner's Cost			$4,619,453
	Baseline Studies, Engineering and Permitting			$1,477,873
	Construction Management, Biological Monitoring, and O&M			$615,927
Contingency	Contingency			$4,366,350
	Total			**$54,743,102**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

4. Partial removal includes installation of a 6' weir to preserve an impounded section of reservoir.

A-4 WEBBER DAM FULL REMOVAL SCENARIO CONCEPTUAL ESTIMATE

Consumers Energy
Webber Dam
Decommissioning Cost Evaluation - Full Removal

Category	Cost Activity	WSP Unit Cost	Quantity	WSP Opinion of Cost
Utility Separation	Remove Substation	$ 60,190.00	1	$ 60,190
	Remove lines from plant to substation	$ 71.03	200	$ 14,205
Decommissioning and Demolition	Remove security fencing	$ 2.36	500	$ 1,180
	Remove plant access road	$ 5.90	200	$ 1,180
	Remove septic tank/drain field	$ 11,808.00	1	$ 11,808
	Remove piezometers	$ 2,361.86	7	$ 16,533
	Remove all powerhouse equipment	$ 256,625.00	1	$ 256,625
	Demolish and remove concrete/masonry	$ 207.00	6400	$ 1,324,800
	Remove trash racks	$ 264.85	20	$ 5,297
	Remove Gates - Powerhouse	$ 264.84	59	$ 15,626
	Demolish and remove concrete	$ 207.00	9350	$ 1,935,450
	Remove gates - Spillway	$ 264.83	60	$ 15,890
	Remove walkway and hoist rails	$ 264.83	65	$ 17,214
	Remove hoists	$ 264.81	16	$ 4,237
	Drain 660-acre reservoir	$ 1,452,145.00	1	$ 1,452,145
	Demolish/remove entire earth dam, core wall and emergency spillway: Excavation	$ 14.64	61600	$ 901,824
	Demolish/remove entire earth dam, core wall and emergency spillway: Reinforced concrete demolition	$ 207.00	580	$ 120,060
	Remove accumulated sediments (non-contaminated): Dam pilot channel dredging	$ 7.09	136970	$ 971,118
	Remove accumulated sediments (non-contaminated): Reservoir dredging	$ 7.09	1008390	$ 7,149,486
	Remove accumulated sediments (non-contaminated): Mobilization/Demobilization	$ 98,087.00	1	$ 98,087
Abatement and Regulated Material Removal	Contaminated Sediments - Removal	$ 7.09	106480	$ 754,944
	Contaminated Sediments - Disposal	$ 70.00	183816	$ 12,867,150
Environemental and Restoration	Reuse (grading) of non-contaminated excavated & dredged material	$ 8.00	1206960	$ 9,655,680
	Grading & surface preparation/amendments	$ 6,700.00	343	$ 2,298,100
	Channel creation - Riffle Section at downstream tie in	$ 150.00	14815	$ 2,222,250
	Seed former reservoir bottom	$ 3,100.00	343	$ 1,063,300
	Plant former reservoir bottom	$ 3,072.00	343	$ 1,053,696
	Apply Erosion Control Measures: Silt Fence	$ 5.00	22000	$ 110,000
	Apply Erosion Control Measures: Rip Rap Protection	$ 150.00	5000	$ 750,000
	Bank Stabilization - Hard Structure	$ 333.33	4347	$ 1,449,086
	Bank Stabilization - Live stakes and Jute Matting	$ 54.53	24635	$ 1,343,331
Salvage	Salvage Value	$ (59,129.00)	1	$ (59,129)
	Subtotal			**$47,881,363**
Project Indirect	Owner's Cost			$5,252,132
	Baseline Studies, Engineering and Permitting			$1,225,498
	Construction Management, Biological Monitoring, and O&M			$700,285
Contingency	Contingency			$4,788,137
	Total			**$59,847,415**

Notes:

1. Removal and disposal of contaminated sediment based on limited data and actual quantity and level of effort may vary considerably.

2. Reservoir restoration assumes the excavated and dredged non-contaminated soil and sediment are reused on site and the entire newly exposed reservoir bottom will require grading, surface amendments, seeding and planting.

3. WSP unit costs based on Mead & Hunt Retirement Studies, Kiewit Infrastructure Co. Cost Estimates and WSP's internal cost database. Additional cost assumptions stated above.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)	Case No. U-21985

DIRECT TESTIMONY

OF

JASON R. COKER

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025

INTRODUCTION

Q. Please state your name and business address.

A. My name is Jason R. Coker, and my business address is One Energy Plaza, Jackson, Michigan 49201.

Q. By whom are you employed and in what capacity?

A. I am employed by Consumers Energy Company ("Consumers Energy" or the "Company") as the Director of Regulatory Policy and Research.

Q. Please describe your educational background.

A. I graduated from Western Michigan University in 1999 with a Bachelor of Business Administration Degree, majoring in accounting. I am also a Certified Public Accountant registered in the state of Michigan.

Q. Please describe your professional experience.

A. From 1999 to 2003, I worked as a staff auditor at Willis and Jurasek, PC in Jackson, Michigan where I conducted financial audits and prepared income tax returns. In 2003, I became the Director of Accounting for Delhi Charter Township in Holt, Michigan, overseeing payroll, accounts payable, accounting, financial reporting, and budgeting.

In 2005, I joined Consumers Energy as a General Accounting Analyst II in the Technical Accounting and Accounting Policy Department. My responsibilities included implementing new financial accounting standards, researching technical accounting issues, and reviewing contracts for accounting implications. In 2009, I was promoted to Senior Accounting Analyst and assumed responsibility for restricted stock accounting and certain Securities and Exchange Commission reporting disclosures, while continuing my previous duties. In 2012, I assumed responsibility for accounting and reporting of contingencies, including those related to Consumers Energy's manufactured gas plants.

In 2016, I joined the Rates and Regulation Department as a Senior Rate Analyst II in the Revenue Requirement Section and was promoted to Principal Rate Analyst in 2018. My responsibilities included developing, analyzing, and reviewing the Company's monthly return studies. These include studies pertaining to balance sheet working capital, cost of capital, return on investment, and Return on Equity ("ROE"). I also assisted in the development of analyses related to the Company's revenue requirements and the preparation of electric and gas rate case filings at the Michigan Public Service Commission ("MPSC" or the "Commission"). Additionally, I calculated the monthly Gas Cost Recovery ("GCR") factor and conducted various ad hoc studies pertaining to cost of capital, ROE, and revenue requirements. I was promoted to Director of Regulatory Policy and Research in 2024.

Q. What are your responsibilities as the Director of Regulatory Policy and Research at Consumers Energy?

A. As the Director of Regulatory Policy and Research, I lead the development and analysis of regulatory strategies that support the Company's electric and gas operations. My responsibilities include overseeing policy research, regulatory filings, and coordinating with internal subject matter experts to ensure our positions are well-supported and aligned with applicable regulatory frameworks. I also work closely with regulatory agencies, stakeholders, and industry groups to advocate for policies that promote reliability, affordability, and sustainability for customers.

Q. Have you previously filed testimony with the Commission?

A. Yes.

Q. Please state the proceedings you have been involved in.

A. I sponsored testimony in the following cases:

Case No. 17943-R – Consumers Energy GCR reconciliation case;

Case No. U-18166 – Consumers Energy Saginaw Trail Pipeline Act 9 Filing;

Case No. U-18322 – Consumers Energy electric rate case;

Case No. U-18411 – Consumers Energy GCR plan case;

Case No. U-18424 – Consumers Energy gas rate case;

Case No. U-20075 – Consumers Energy GCR reconciliation case;

Case No. U-20209 – Consumers Energy GCR reconciliation case;

Case No. U-20233 – Consumers Energy GCR plan case;

Case No. U-20234 – Consumers Energy GCR reconciliation case;

Case No. U-20322 – Consumers Energy gas rate case;

Case No. U-20650 – Consumers Energy gas rate case;

Case No. U-20963 – Consumers Energy electric rate case;

Case No. U-21090 – Consumers Energy 2021 integrated resource plan;

Case No. U-21224 – Consumers Energy electric rate case; and

Case No. U-21389 – Consumers Energy electric rate case.

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to present the proposed accounting entries showing the effect of the proposed sale of Consumers Energy's 13 river hydroelectric generating plants ("River Hydros") and present the Company's proposed treatment of transaction costs, retention costs, and the gain on the sale of the River Hydros. My testimony will also

discuss the financial compensation mechanism ("FCM") associated with the power purchase agreement ("PPA").

Q. Are you sponsoring any exhibits in this proceeding?

A. Yes. I am sponsoring the following exhibits:

Exhibit A-10 (JRC-1) Projected Revenue Requirement

Exhibit A-11 (JRC-2) Projected Customer Rate Impacts

Q. Were these exhibits prepared by you or under your direction and supervision?

A. Yes.

Q. Please provide the name and principal business address of the applicant.

A. The applicant is: Consumers Energy Company, One Energy Plaza, Jackson, Michigan 49201.

Q. Please provide the name and address of the persons authorized to receive notices and communications regarding this application.

A. Notices and communications regarding this Application should be sent to the following Consumers Energy employees:

Jason R. Coker
One Energy Plaza
Jackson, Michigan 49201
(517) 474-2265 (phone)

jason.coker@cmsenergy.com

Bret A. Totoraitis
One Energy Plaza
Jackson, Michigan 49201
(517) 788-0835 (phone)
(517) 788-2470 (fax)
bret.totoraitis@cmsenergy.com

ACCOUNTING ENTRIES AND PROPOSALS

Q. Please summarize the main components of the transaction that are relevant to the transaction related accounting entries.

A. Consumers Energy has entered into an agreement to sell its 13 River Hydros (collectively the "River Hydro Fleet") to Confluence Hydro LLC ("Confluence") for a nominal price of

$1 per facility ("the hydro sale"). As part of the transaction, Consumers Energy will also enter into a 30-year Power Purchase Agreement ("PPA") with Confluence to purchase the electric output from the River Hydro Fleet.

The Company also purchased five properties downstream from Rogers Dam, in order to eliminate the need for the Rogers Spillway Project—resulting in an estimated $130 million in customer savings. The Plant in Service balance includes the costs associated with the acquisition of those properties and related demolition costs.

Company witness Richard T. Blumenstock provides additional details regarding the transaction in his direct testimony.

Q. What are the anticipated projected balances of the River Hydro Fleet-related accounts at the time of closing?

A. The Company assumed a closing date of March 31, 2027, for purposes of illustrating the proposed journal entries, based on the estimated timing of regulatory approvals. The projected balances were determined based on the actual net book value as of August 31, 2025, adding the incremental capital expenditures necessary for safe and reliable operations, and subtracting depreciation that is expected to be recovered through customer rates through March 31, 2027. This results in a projected net book value of the River Hydro Fleet of negative $28,900,000, i.e. the depreciation collected, including cost of removal, exceeded the total of capital investments in the plant. The projected balances at that time are provided in the following table.

Account Name	**A/C #**	**Debit Balance**	**Credit Balance**
Accumulated depreciation	108		443,700,000
CWIP	107	132,700,000	
Plant in Service	101	282,100,000	

These balances also serve as the Company's pro forma financial statements to reflect the impact of the transaction. Aside from the entries shown above, there are no other material impacts to the Company's financial statements resulting from the transaction.

Q. What accounting entry does the Company propose to record at the time of closing?

A. The Company proposes to record the following journal entry at the time of closing. The amounts of the journal entry are projected assuming a closing date of March 31, 2027. The actual journal entry amounts will likely vary due to the timing of regulatory approvals, actual transaction costs incurred, variances in maintenance costs, etc.

Account Name	**A/C #**	**DR**	**CR**
To record the proceeds from the sale			
Account Receivable	143	13	
Electric Plant Purchased or Sold	102		13
To remove original cost of plant at the time of sale closing (shown as 3/31/2027)			
CWIP	107		132,700,000
Plant in Service	101		282,100,000
Accumulated depreciation	108	414,800,000	
To remove the depreciation reserve for the assets at time of sale closing (show as 3/31/2027)			
Accumulated depreciation	108	443,700,000	
Electric Plant Purchased or Sold	102		443,700,000

To record gain on sale			
Gain on disposition of property	421.1		28,900,013
Electric Plant Purchased or Sold	102	28,900,013	
To record selling expenses to net with gain			
Gain on disposition of property	421.1	7,613,000	
Accumulated depreciation	108		7,613,000
To defer gain on sale for future refund			
Regulatory liabilities	254		21,287,013
Other income and deductions	426.5	21,287,013	

Q. How were the projected amounts of the journal entry determined?

A. The projected amounts were determined based on the projected net book value as described previously in this testimony. The projected net book value of the River Hydro Fleet of negative $28,900,000 will be removed from the Company's balance sheet. A receivable of $13 will be recorded for the nominal purchase price. The projected gain of $21,287,013 reflects the difference between the projected net book value of the River Hydro Fleet and the nominal purchase price, adjusted for estimated transaction costs of $7,613,000. The Company projects a net gain but acknowledges that unforeseen events and timing could cause the outcome of the transaction to result in either a net gain or a net loss and commits to transparently reporting the result once known.

Q. What does the Company propose to do with the gain on the transaction?

A. The Company proposes to defer the gain in a regulatory account for refund to customers. Should the outcome of the transaction result in a net loss, the Company proposes to defer the loss in a regulatory account. The method of recovery of any deferred loss would then be requested in the first electric rate case after the closing of the transaction.

Q. Does the Company have any additional accounting requests?

A. Yes. The Company has accounting requests for the following items related to the transaction: employee retention costs, incremental employee costs, and depreciation expense.

Q. What is the Company's proposal regarding employee retention costs related to the transaction?

A. The Company proposes to defer the employee retention costs of $14.5 million in a regulatory account. These employee retention costs are supported in the testimony of Company witness Adam J. Monroe. The Company further requests to net these costs against the deferred gain on the sale. The method of recovery of this net deferred balance would then be requested in the first electric rate case after the closing of the transaction.

Q. What are the incremental employee costs?

A. The incremental employee costs reflect the costs of onboarding additional employees to allow for adequate training ahead of the hydro sale closing. These are operational costs the Company will incur to support continuity of operations before and after the sale. Company witness Monroe provides additional details regarding the incremental employee costs in his direct testimony.

Q. What is the Company's proposal regarding the incremental employee costs related to the transaction?

A. The Company proposes to defer the incremental employee costs in a regulatory account. These incremental employee costs are expected to be approximately $4.9 million and are supported in the testimony of Company witness Monroe. The Company further requests to net these costs against the deferred gain on the sale. The method of recovery of this net deferred balance would then be requested in the first electric rate case after the closing of the transaction.

Q. Please summarize instances where the applicant, or any party to the transaction, intends to seek rate recovery of transaction costs, acquisition premiums, goodwill, or control premiums, and if so, what are the projected amounts?

A. The Company anticipates incurring approximately $27 million in transaction-related costs, including $14.5 million in employee retention costs, $4.9 million in incremental employee costs, and $7.6 million in legal and engineering expenses. As described above, the Company seeks regulatory approval to defer the retention costs and incremental employee costs and net them against the gain on the sale and include the net deferred balance in its next electric rate case. The legal and engineering costs are included in the calculation of the gain on the transaction.

There are no acquisition premiums, goodwill, or control premiums associated with this transaction.

Q. What is the Company's proposal regarding depreciation expense on the River Hydro Fleet?

A. If depreciation continues to be collected in rates after regulatory approvals are received, the Company proposes to record any over-collection as a regulatory liability, to be refunded to customers. The refund of any deferred amounts would be addressed in a future electric rate case.

Q. Is Consumers Energy making any additional commitments to the Commission that are not included in the transaction documents.

A. Yes, the Company is committing to refunding any net gain, if one is realized, from the transaction to customers, net of employee retention and incremental employee costs, as detailed earlier in this section of my testimony. Additionally, the Company will defer and subsequently refund to customers any depreciation expense collected in rates following regulatory approval of the sale.

Q. Are there any transaction-related savings credits being provided to customers?

A. While the transaction documents do not identify transaction-related savings credits, the Company is committing to refunding the net gain, if any, from the transaction, after accounting for employee retention and incremental employee costs, and will also refund any depreciation collected in rates after regulatory approval of the sale, as described previously. These could be regarded as transaction-related savings credits.

FINANCIAL COMPENSATION MECHANISM

Q. Do the proposed PPAs qualify for an FCM under MCL 460.6t(15) and MCL 460.1028(8)?

A. Yes. MCL 460.6t(15) provides that the Commission "shall authorize a financial incentive" for a PPA "with an entity that is not affiliated with that utility" when the PPA is for

"renewable energy resources or a third-party contract for energy storage systems or clean energy systems." MCL 460.1028(8) includes identical language. Confluence is an entity that is not affiliated with Consumers Energy. Furthermore, the River Hydro Fleet qualifies as "renewable energy resources" because (i) they are resources that naturally replenish over a human, not a geological, time frame and that are ultimately derived from water power and (ii) they produce electricity by converting the kinetic energy of moving water released through dams.

Q. How is the proposed FCM calculated?

A. The proposed FCM is calculated as the product of contract payments in each year multiplied by the Company's pretax weighted average cost of permanent capital comprised of long-term debt obligations and equity of the Company's total capital structure as determined by the Commission's final order in the Company's most recent electric general rate case. Specifically, the Company proposes an FCM initially based on a pre-tax weighted average cost of permanent capital of 8.75%, consistent with the weighted average cost of capital approved in Case No. U-21585 or such other pre-tax weighted average cost of permanent capital as may be in effect as the result of a final order in a subsequent Consumers Energy electric rate case at the time of the Commission's final order in this proceeding.

Q. What relief is Consumers Energy requesting from the Commission?

A. Consumers Energy respectfully requests that the Commission recognize that the PPA is eligible for an FCM in its final order in this case, consistent with MCL 460.6t(15) and MCL 460.1028(8).

INTERCONNECTION COSTS

Q. Does the Company expect to incur other costs related to the River Hydro Fleet?

A. Yes. The Company expects to incur approximately $20 million in interconnection costs to upgrade the substations serving the River Hydro Fleet. The units are grandfathered and have not been upgraded to modern interconnection standards. However, the Company has an obligation to perform these upgrades to mitigate the risk to public safety once these assets are turned over to a third party. The Company has eight years to complete the upgrades.

Q. What is the Company requesting regarding these interconnection costs?

A. The Company intends to include these costs in future electric rate requests, as it would any other capital expenditure and recover them through base rates. The Company requests the Commission to determine that these future costs can be included in base rates, subject to a reasonableness and prudency review.

CUSTOMER IMPACTS

Q. Please explain Exhibit A-10 (JRC-1).

A. Exhibit A-10 (JRC-1) calculates the revenue requirement for the option to sell the River Hydro Fleet, the option to decommission the River Hydro Fleet, and the option to relicense and continue operating the River Hydro Fleet.

Lines 1 through 8 calculate the estimated revenue requirement of selling the River Hydro Fleet and entering into a PPA to purchase the electric output from the River Hydro Fleet. Line 2 calculates the impact of amortizing the projected net gain over the 30-year life of the PPA. Line 3 calculates the impact of the amortization of the deferred retention costs over the 30-year life of the PPA. Line 4 calculates the impact of the amortization of the deferred incremental employee costs over the 30-year life of the PPA. Line 5 shows

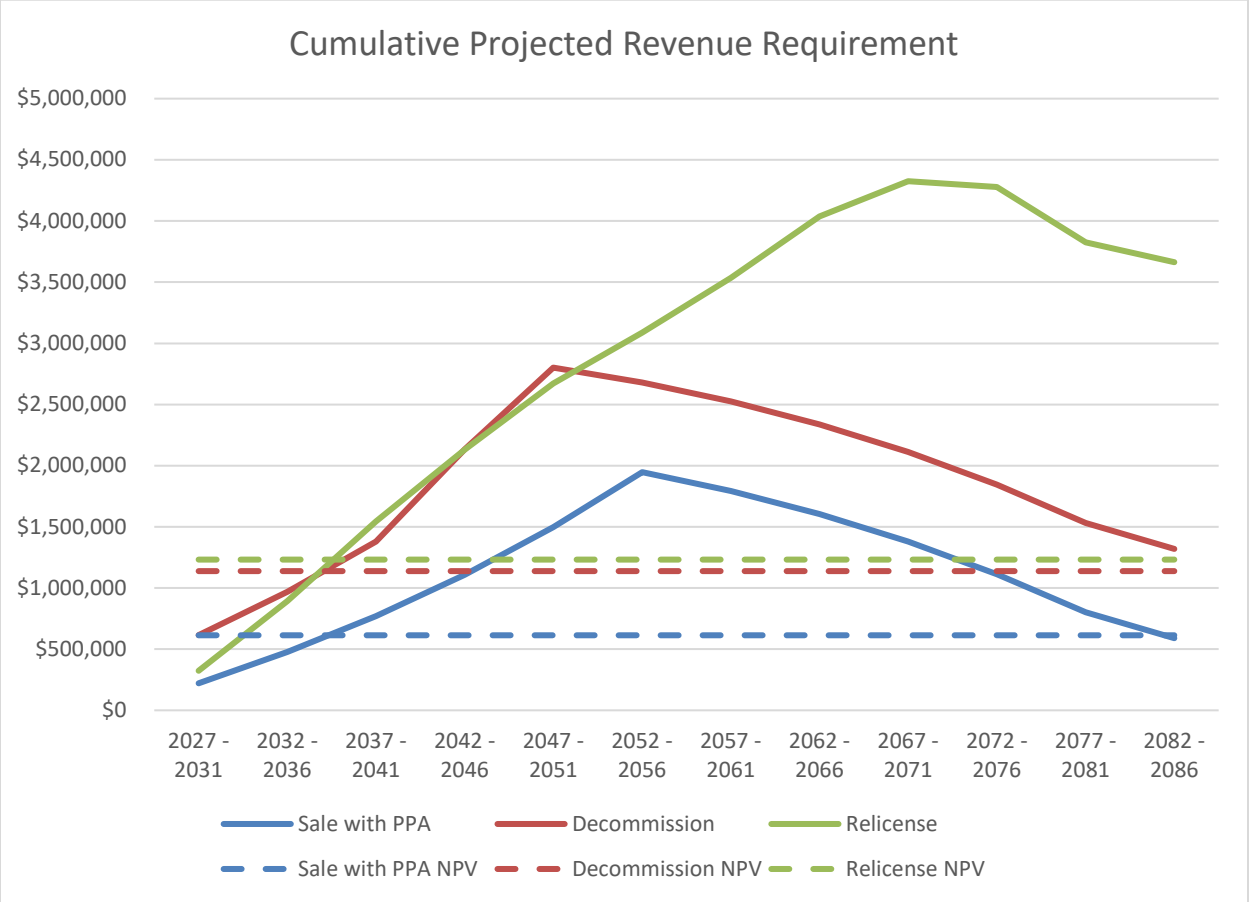
the costs of the PPA, which are supported by Company witness Blumenstock. Line 6 adds the cost to purchase replacement power. Line 7 reduces the revenue requirement for the market revenues associated with the power purchased. Line 8 is the revenue requirement associated with the sale of the River Hydro Fleet and is the sum of lines 2 through 6 less line 7.

Lines 9 through 28 show the calculation of the revenue requirement of decommissioning the hydro facilities at the end of their license periods. Lines 10 through 13 calculate the average plant balance for each year. Line 14 shows the depreciation rate that is necessary to fully depreciate the plant balance by 2050, the final year of decommissioning. Lines 15 through 19 calculate the average depreciation reserve for each year. Line 15 shows the beginning depreciation reserve for each year. Line 16 shows the depreciation expense, which is calculated by multiplying the average plant balance on line 13 by the depreciation rate on line 14. Line 17 shows the decommission spend or Cost of Removal, which is sponsored by Company witness Blumenstock. Line 18 is the ending depreciation reserve, which is calculated by adding lines 15 and 16 and subtracting line 17. Line 19 is the average depreciation reserve for the year which is calculated by dividing the sum of lines 15 and 18 by 2. Line 20 is the average rate base, which is calculated by summing lines 13 and 19. Line 22 calculates the return on rate base by multiplying line 20 by the weighted average cost of capital on line 21. Line 23 is the O&M expense, which is sponsored by Company witness Blumenstock. Line 24 is the depreciation expense from line 16. Property Taxes are shown on line 25. Replacement Power Cost is shown on line 26. Market Revenues are shown on line 27. The Revenue Requirement is shown on line 28. It is the sum of lines 22 through 26 less line 27.

Lines 29 through 47 show the calculation of the revenue requirement associated with the decision to relicense and continue operating the River Hydro Fleet. The calculation is similar to that of the decommissioning revenue requirement calculation.

Q. Please describe the results of the revenue requirement calculations for the three options the Company considered.

A. The chart below presents the total revenue requirement for each scenario along with the net present values of those scenarios. It shows that the option to sell the River Hydro Fleet is the lowest cost option.



Q. Why did you include market revenue in your rate analysis when Mr. Blumenstock did not include it in his business case analysis?

A. Mr. Blumenstock's business case analysis did not include market revenue since it is equivalent in all scenarios and would have identical impacts on each business case. For further explanation, see the direct testimony of Company witness Blumenstock. My rate impact analysis includes market revenues since they will have an actual impact on electric rates.

Q. Please explain Exhibit A-11 (JRC-2).

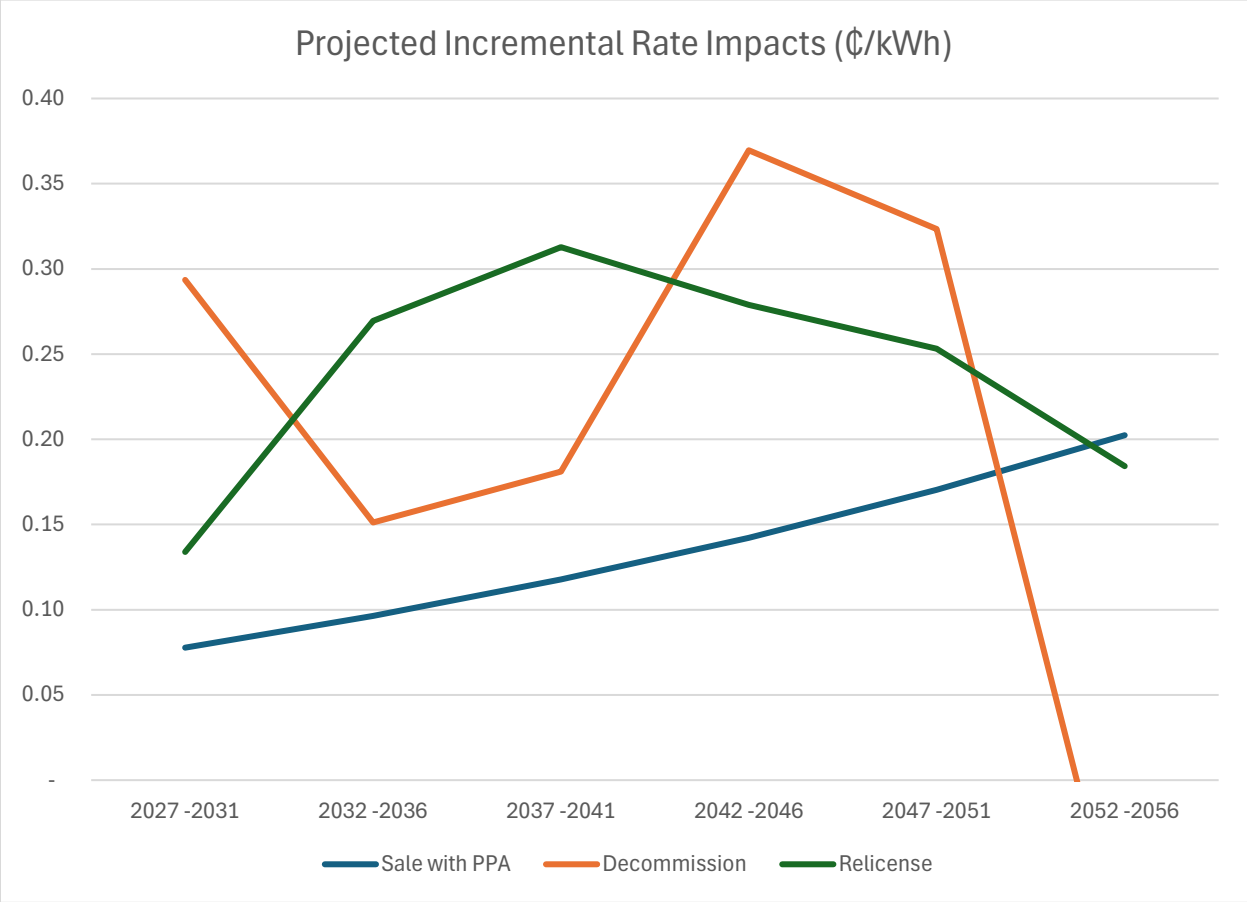
A. Exhibit A-11 (JRC-2) calculates the impact to customer rates for the option to sell the River Hydro Fleet, the option to decommission the River Hydro Fleet, and the option to relicense and continue operating the River Hydro Fleet. Lines 1 through 12 calculate the customer rate impact of the three options by dividing the revenue requirement calculated on Exhibit A-10 (JRC-1) by projected total mega-watt hours sold. Lines 14 through 18 show the revenue requirements of the three options and amounts approved in rates in Case No. U-21585 for the River Hydro Fleet by five-year periods. Lines 19 through 23 show the cumulative revenue requirements for the three options plus the amounts included in rates per the order in Case No. U-21389 by five-year periods. Lines 24 through 27 show the net present value of each of the three options. Line 28 shows the projected sales in megawatt hours by five-year periods. Lines 29 through 32 calculate the customer rate impact by five-year period in cents per kilowatt hour. Lines 33 through 36 calculate the incremental customer rate impact by five-year periods by subtracting the revenue requirement approved in rates on line 18 from the revenue requirement of the options shown on lines 15 through 17 and then dividing the result by the projected sales on line 28. Lines 37 through 40

calculate the differences between the customer impacts of the various options.

Q. Please describe the projected impact of the transaction on customer rates.

A. The chart below provides a visual summary of the projected impact on customer rates. The option to sell the River Hydro Fleet and enter into a PPA with Confluence shows incremental rate impacts between 0.08 ¢/kWh and 0.20 ¢/kWh over the 30-year term of the PPA. The option to decommission the River Hydro Fleet shows incremental rate impacts between 0.15 ¢/kWh and 0.37 ¢/kWh over the 30-year term of the PPA. Beginning around 2051, the option to decommission would result in a reduction to customer rates due to the plants being fully decommissioned and the removal of depreciation expense for the River Hydro Fleet from the revenue requirement. The option to relicense the River Hydro Fleet shows incremental rate impacts between 0.13 ¢/kWh and 0.31¢/kWh over the 30-year term of the PPA. Selling the River Hydro Fleet has favorable customer rate impacts when compared with decommissioning and relicensing the River Hydro Fleet. The savings for customers when comparing selling the River Hydro Fleet with decommissioning range from 0.05 ¢/kWh in the 2032 - 2036 period to 0.23 ¢/kWh in the 2042 - 2046 period. Decommissioning the River Hydro Fleet would briefly have positive customer rate impacts between 2051, when the River Hydro Fleet would be fully decommissioned, and 2056, when the PPA term would expire, but the savings in those years would not be enough to offset the substantially higher customer rate impacts in the preceding years. The incremental rate impacts to customers from selling the River Hydro Fleet, compared to relicensing, range from an increase of 0.08 ¢/kWh in the 2077–2081 period to a savings of 0.38 ¢/kWh in the 2062–2066 period. Over the next 30 years, the projected incremental impacts range from an increase of 0.02 ¢/kWh (2052–2056) to a savings of

0.19 ¢/kWh (2037–2041).



Q. Is this transaction in customers' best interests?

A. Yes. The Company has selected the lowest cost option for customers. The PPA will cost customers less than it would cost them if the Company were to decommission the plants at the end of the term of each facility's operating license and will also cost less than it would cost if the Company chose to relicense and continue operating the River Hydro Fleet.

CAPITAL STRUCTURE

Q. Will this transaction impair the jurisdictional regulated utility's ability to raise the necessary capital or to maintain a reasonable capital structure?

A. No, this transaction will not have any impact or impairment on the utility's ability to raise future capital or maintain a reasonable capital structure. The amount of capital necessary

to fulfill Consumers Energy's obligation in this transaction is not material to the overall capital structure. Accordingly, this transaction will also have no material impact on the Company's cost of capital.

Q. Please provide a description of any new entities created to facilitate the transaction.

A. Hull Street Energy created a wholly owned subsidiary, Confluence, LLC, to facilitate the transaction and to own and operate the River Hydro Fleet.

Q. Please provide a summary of the capital structure of all parties to the transaction prior to the closing of the transaction and after the closing of the transaction.

A. Consumers Energy is well capitalized prior to the closing of the transaction. This transaction will not have a significant impact on the capital structure of Consumers Energy. Consumers Energy's capital structure will not be materially impacted by the capital outlays required by this transaction.

Confluence is owned via a partnership structure, with Hull Street Energy Partners III, LP holding a 70.43% ownership share and HSE Confluence Hydro Parallel, LLC holding a 29.57% ownership share. Confluence has no preferred stock and no bonded indebtedness. Confluence will have the financial resources of the PPA payments available to complete necessary improvements and to operate the River Hydro Fleet.

STATE AND LOCAL TAX IMPACTS

Q. Please describe the effect of the transaction on the Company's state and local tax liability.

A. The proposed transaction should not have a material impact on the Company's state and local income tax liabilities, nor should it have a material impact on the Company's state and local non-income tax liabilities. Confluence will assume responsibility for all local property taxes associated with the divested properties at the closing date. The amount of

property taxes associated with the River Hydro Fleet is $2,459,390 as detailed in Schedule 8.4(b)(i)(C) of the PSA which is filed in this case as Confidential Exhibit A-1 (RTB-1).

CONCLUSION

Q. Please summarize your direct testimony.

A. In summary, the proposed sale of the River Hydro Fleet and the associated Power Purchase Agreement with Confluence Hydro LLC represent a prudent and customer-focused strategy. The transaction enables long-term cost savings, avoids significant capital expenditures, and ensures continued access to renewable energy resources.

Consumers Energy respectfully requests Commission approval of the sale and the PPA, including the FCM. Additionally, the Company seeks approval to include the cost of acquiring five properties downstream from the Rogers Dam in the calculation of the gain on the sale and authorization to offset the projected gain on the sale, including transaction costs, of approximately $21.3 million against employee retention costs of approximately $14.5 million and incremental employee costs of approximately $5 million, and to propose a method to recover the net balance in its next general electric rate case following the outcome of this case. Lastly, the Company requests to defer for future refund any depreciation expense collected in rates after regulatory approval of the sale. This approach ensures transparency and fairness in the treatment of transaction-related costs and benefits.

Q. Does this conclude your direct testimony?

A. Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)	Case No. U-21985

EXHIBITS

OF

JASON R. COKER

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025

MICHIGAN PUBLIC SERVICE COMMISSION
Consumers Energy Company
Projected Revenue Requirement
($000)

Case No.: U-21990
Exhibit No.: A-10 (JRC-7)
Witness: J R Cooper
Page: All Cases
Date: October 2020

Line No.	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)	(t)	(u)	(v)	(w)	(x)	(y)	(z)	(aa)	(ab)	(ac)	(ad)	(ae)	(af)	(ag)	(ah)	(ai)	(aj)	(ak)	(al)	(am)	(an)	(ao)	(ap)	(aq)	(ar)	(as)	(at)	(au)	(av)	(aw)	(ax)	(ay)	(az)	(ba)	(bb)	(bc)	(bd)	(be)	(bf)	(bg)	(bh)	(bi)
		5001	5002	5003	5004	5005	5006	5007	5008	5009	5010	5011	5012	5013	5014	5015	5016	5017	5018	5019	5020	5021	5022	5023	5024	5025	5026	5027	5028	5029	5030	5031	5032	5033	5034	5035	5036	5037	5038	5039	5040	5041	5042	5043	5044	5045	5046	5047	5048	5049	5050	5051	5052	5053	5054	5055	5056	5057	5058	5059	5060	5061	5062	5063	5064	5065	5066
1	**Example: Sale with PPA**																																																																									
2	Amortization of Gas	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ (743)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3	Amortization of Deferred Retention Costs	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	483	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	Amortization of Deferred Incremental Employee Costs	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	Depreciation	76,468	76,778	94,337	82,248	84,455	85,515	89,679	90,896	93,367	95,696	97,902	100,321	102,659	105,432	108,040	110,758	113,515	116,313	119,245	122,243	125,299	128,432	131,642	134,953	138,337	141,792	145,338	148,941	152,669	156,481	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	Replacement Power Cost																																																																									
7	Less: Market Revenues	34,712	35,431	35,325	34,642	31,776	30,351	29,699	29,479	29,477	31,484	30,339	31,367	30,659	30,351	31,488	30,473	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893
8	**Revenue Requirement**	$ 41,667	$ 41,948	$ 59,816	$ 48,447	$ 53,379	$ 55,927	$ 60,623	$ 62,100	$ 64,610	$ 64,912	$ 67,805	$ 69,919	$ 72,776	$ 75,803	$ 77,281	$ 80,548	$ 82,719	$ 86,598	$ 88,995	$ 93,528	$ 94,054	$ 98,202	$ 101,792	$ 103,992	$ 106,217	$ 107,092	$ 111,577	$ 115,188	$ 119,205	$ 120,923	$ 125,771	$ 129,743	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
9																																																																									
10	**Example: Depreciation**																																																																			
11	Plant in Service - Beg	$ 414,693	$ 427,534	$ 441,410	$ 459,910	$ 470,956	$ 479,316	$ 490,772	$ 493,207	$ 493,224	$ 495,424	$ 493,364	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716	$ 493,716
12	+ Capex	12,841	13,878	18,500	6,246	7,459	11,456	2,435	507	2,200	767	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Plant in Service - Eng	427,534	441,412	459,910	466,156	478,416	490,772	493,207	493,714	495,424	496,191	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716
14	Plant in Service - Average	421,169	435,973	457,160	472,783	477,087	479,615	490,955	493,171	493,319	495,808	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716
15	Depreciation Rate	Table																																																																							
16	Beginning Depreciation Reserve	410,700	423,268	768,200	949,650	1,118,838	1,298,029	1,478,164	1,658,437	1,839,313	2,012,840	2,190,900	2,276,601	3,671,511	3,315,950	3,459,256	3,219,551	1,022,132	749,668	799,583	839,865	910,540	265,476	339,368	411,550	485,736	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716
17	Depreciation Expense	12,568	13,678	18,500	6,246	7,459	11,456	2,435	507	2,200	767	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Ending Depreciation Reserve	423,268	436,946	786,700	955,896	1,126,296	1,309,485	1,480,599	1,658,944	1,841,513	2,013,607	2,191,253	2,276,601	3,671,511	3,315,950	3,459,256	3,219,551	1,022,132	749,668	799,583	839,865	910,540	265,476	339,368	411,550	485,736	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716
19	Average Depreciation Reserve	423,484	430,754	664,330	1,029,540	1,298,324	1,368,998	1,567,256	1,748,660	1,804,227	2,097,421	2,230,652	2,276,956	3,703,537	3,480,094	3,224,917	3,123,681	889,890	757,574	798,222	891,282	407,507	300,921	374,769	448,453	485,736	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716	493,716
20	Average Rate Base	(322,151)	(328,763)	(387,176)	(549,757)	(733,237)	(868,651)	(1,068,591)	(1,256,798)	(1,402,835)	(1,613,902)	(1,749,333)	(1,846,149)	(2,231,561)	(2,866,556)	(3,045,811)	(3,021,781)	(2,814,154)	(2,775,816)	(2,745,938)	(2,696,885)	74,209	140,796	149,647	30,263	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
21	Weighted Average Cost of Capital	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%
22	Return on Rate Base	(7,861)	(16,423)	(28,311)	(43,660)	(57,642)	(63,170)	(80,142)	(96,421)	(110,254)	(126,976)	(137,721)	(143,139)	(173,877)	(221,454)	(235,343)	(233,448)	(217,413)	(214,470)	(212,163)	(208,417)	5,733	10,879	11,562	2,338	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
23	Income Tax	(1,651)	(3,449)	(5,945)	(9,169)	(12,105)	(13,266)	(16,830)	(20,248)	(23,153)	(26,665)	(28,921)	(30,059)	(36,514)	(46,505)	(49,422)	(49,024)	(45,657)	(45,039)	(44,554)	(43,768)	1,204	2,284	2,428	491	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
24	Depreciation Expense	12,568	13,678	18,500	6,246	7,459	11,456	2,435	507	2,200	767	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Property Taxes	2,409	2,509	2,609	2,610	2,662	2,715	2,770	2,825	2,882	2,939	2,691	2,862	1,953	1,814	1,836	1,218	1,065	875	893	583	491	591	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	Replacement Power Cost																																																																					
27	Less: Market Revenues	34,712	35,431	35,325	34,642	31,776	30,351	29,699	29,479	29,477	31,484	30,339	31,367	30,659	30,351	31,488	30,473	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893
28	**Revenue Requirement**	$ 41,667	$ 41,948	$ 59,816	$ 48,447	$ 53,379	$ 55,927	$ 60,623	$ 62,100	$ 64,610	$ 64,912	$ 67,805	$ 69,919	$ 72,776	$ 75,803	$ 77,281	$ 80,548	$ 82,719	$ 86,598	$ 88,995	$ 93,528	$ 94,054	$ 98,202	$ 101,792	$ 103,992	$ 106,217	$ 107,092	$ 111,577	$ 115,188	$ 119,205	$ 120,923	$ 125,771	$ 129,743	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
29																																																																				
30	**Example: Retirement**																																																																		
31	Plant in Service - Beg	$ 414,693	$ 428,977	$ 713,237	$ 870,097	$ 944,554	$ 970,472	$ 1,054,470	$ 1,137,791	$ 1,303,393	$ 1,499,997	$ 1,545,700	$ 1,579,240	$ 1,609,682	$ 1,643,378	$ 1,674,815	$ 1,707,583	$ 1,748,938	$ 1,802,668	$ 1,848,942	$ 2,048,217	$ 2,107,579	$ 2,143,116	$ 2,179,991	$ 2,216,332	$ 2,256,610	$ 2,292,068	$ 2,333,742	$ 2,399,157	$ 2,433,366	$ 2,479,511	$ 2,748,378	$ 2,791,991	$ 2,879,128	$ 2,903,196	$ 3,029,476	$ 3,077,366	$ 3,167,649	$ 3,197,938	$ 3,997,900	$ 4,049,249	$ 4,139,070	$ 4,341,903	$ 4,224,871	$ 4,352,907	$ 4,380,964	$ 4,416,564	$ 4,556,244	$ 4,616,899	$ 4,655,657	$ 4,839,097	$ 4,849,258	$ 4,912,842	$ 4,962,398	$ 4,972,023	$ 4,993,850	$ 4,998,013	$ 4,998,013	$ 4,998,013	$ 4,998,013	$ 5,148,153	$ 5,148,153
32	+ Capex	14,372	14,231	138,685	19,917	21,842	17,996	13,321	19,602	42,605	45,703	34,539	30,442	34,696	31,437	32,768	31,355	34,730	46,274	59,637	59,537	64,536	65,341	40,278	35,458	41,674	65,415	34,209	40,145	291,867	33,137	49,337	26,068	46,288	32,892	30,289	32,711	801,962	90,349	89,821	141,167	117,968	127,036	137,359	24,068	126,280	60,653	183,441	10,161	63,584	49,556	50,625	19,825	14,163	0	0	0	0	150,140	0
33	Plant in Service - Average	421,868	433,102	790,482	912,061	969,248	990,471	1,071,110	1,228,372	1,399,695	1,519,873	1,568,996	1,592,351	1,624,508	1,658,142	1,691,299	1,720,764	1,776,247	1,824,791	1,947,691	2,077,898	2,133,347	2,161,238	2,197,867	2,233,166	2,273,278	2,312,131	2,365,643	2,408,947	2,456,384	2,713,592	2,770,033	2,833,489	2,897,663	3,068,436	3,072,122	3,149,293	3,215,825	3,672,726	3,847,034	4,041,954	4,111,671	4,166,000	4,219,452	4,274,889	4,331,486	4,398,314	4,465,264	4,534,571	4,729,290	4,843,992	4,943,840	4,842,842	4,982,398	4,972,023	4,993,850	4,998,013	4,998,013	4,998,013	5,073,083	5,148,153
34		Table																																																																	
35	Beginning Depreciation Reserve	410,700	419,493	514,774	569,726	630,848	700,267	809,037	898,996	962,972	1,066,743	1,207,837	1,224,614	1,619,626	1,570,736	1,710,001	1,833,626	1,966,722	2,103,499	2,243,987	2,383,929	2,503,914	2,717,552	2,883,953	3,053,173	3,226,389	3,403,287	3,578,315	3,760,970	3,943,620	4,142,099	4,361,821	4,564,295	4,782,430	5,005,301	5,249,553	5,158,909	5,783,954	7,275,367	7,599,065	7,929,912	8,260,332	8,593,548	8,929,979	9,269,978	9,613,542	9,959,671	10,308,335	10,660,679	11,275,331	11,638,093	11,952,662	12,332,998	12,640,642	12,978,524	13,313,587	13,648,488	9,269,909
36	Depreciation Expense	12,783	13,893	18,500	6,246	7,459	11,456	2,435	507	2,200	767	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Ending Depreciation Reserve	423,483	433,387	533,274	575,972	638,307	711,723	811,472	899,503	965,172	1,067,510	1,208,190	1,224,614	1,619,626	1,570,736	1,710,001	1,833,626	1,966,722	2,103,499	2,243,987	2,383,929	2,503,914	2,717,552	2,883,953	3,053,173	3,226,389	3,403,287	3,578,315	3,760,970	3,943,620	4,142,099	4,361,821	4,564,295	4,782,430	5,005,301	5,249,553	5,158,909	5,783,954	7,275,367	7,599,065	7,929,912	8,260,332	8,593,548	8,929,979	9,269,978	9,613,542	9,959,671	10,308,335	10,660,679	11,275,331	11,638,093	11,952,662	12,332,998	12,640,642	12,978,524	13,313,587	13,648,488	9,269,909	9,269,909
38																																																																		
39	Average Depreciation Reserve	417,092	426,440	524,024	572,849	634,578	706,495	810,255	899,250	964,072	1,067,127	1,208,014	1,224,614	1,619,626	1,570,736	1,710,001	1,833,626	1,966,722	2,103,499	2,243,987	2,383,929	2,503,914	2,717,552	2,883,953	3,053,173	3,226,389	3,403,287	3,578,315	3,760,970	3,943,620	4,142,099	4,361,821	4,564,295	4,782,430	5,005,301	5,249,553	5,158,909	5,783,954	7,275,367	7,599,065	7,929,912	8,260,332	8,593,548	8,929,979	9,269,978	9,613,542	9,959,671	10,308,335	10,660,679	11,275,331	11,638,093	11,952,662	12,332,998	12,640,642	12,978,524	13,313,587	13,648,488	9,269,909	9,269,909
40	Average Rate Base	(9,216)	6,659	266,432	297,223	272,718	222,973	223,109	284,108	363,819	371,643	290,954	293,576	313,745	54,979	77,212	(171,427)	(204,709)	(168,947)	(171,555)	(284,072)	(369,638)	(362,545)	(376,772)	(864,023)	(1,009,537)	(1,177,181)	(1,328,815)	(1,412,884)	(1,493,726)	(1,514,217)	(1,467,604)	(1,439,963)	(1,399,238)	(1,899,911)	(1,370,793)	(1,019,577)	(1,610,595)	(1,952,827)	(2,109,961)	(2,268,127)	(2,394,777)	(2,526,771)	(2,254,852)	(2,099,346)	(1,952,827)	(2,109,961)	(2,268,127)	(2,394,777)	(2,526,771)	(2,254,852)	(2,099,346)	(1,952,827)	(2,109,961)	(2,268,127)	(2,394,777)	(2,526,771)	(2,254,852)	(2,099,346)	(1,952,827)	(2,109,961)
41	Weighted Average Cost of Capital	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%	7.35%
42	Return on Rate Base	(680)	491	19,657	21,927	20,123	16,449	16,460	20,962	26,841	27,417	21,464	21,661	23,148	4,056	5,697	(12,648)	(15,102)	(12,464)	(12,657)	(20,957)	(27,272)	(26,747)	(27,798)	(63,747)	(74,481)	(86,862)	(98,035)	(104,227)	(110,202)	(111,722)	(108,272)	(106,227)	(103,255)	(140,170)	(101,123)	(75,210)	(118,846)	(144,060)	(155,660)	(167,340)	(176,655)	(186,437)	(166,350)	(154,886)	(144,060)	(155,660)	(167,340)	(176,655)	(186,437)	(166,350)	(154,886)	(144,060)	(155,660)	(167,340)	(176,655)	(186,437)	(166,350)	(154,886)	(144,060)	(155,660)
43	O&M	14,409	15,154	30,641	31,658	32,097	32,733	33,583	34,191	34,753	35,426	36,130	36,858	37,595	38,347	39,114	39,899	40,699	41,516	42,348	43,195	44,059	44,939	45,837	46,752	47,685	48,637	49,608	50,600	51,612	52,642	53,695	54,769	55,864	56,981	58,121	59,283	60,469	61,678	62,912	64,170	65,453	66,762	68,097	69,459	70,848	72,265	73,711	75,186	76,689	78,223	79,787	81,383	83,011	84,671	86,365	88,092	89,854	91,651	93,484	95,354	97,261
44	Depreciation Expense	12,783	13,893	18,500	6,246	7,459	11,456	2,435	507	2,200	767	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45	Property Taxes	2,409	2,509	2,609	2,610	2,662	2,715	2,770	2,825	2,882	2,939	2,691	2,862	1,953	1,814	1,836	1,218	1,065	875	893	583	491	591	3,215	3,279	3,344	3,410	3,478	3,547	3,618	3,690	3,764	3,839	3,916	3,994	4,074	4,155	4,238	4,323	4,409	4,497	4,587	4,679	4,772	4,868	4,965	5,064	5,166	5,269	5,374	5,482	5,591	5,703	5,817	5,933	6,052	6,173	6,296	6,422	6,550	6,681	6,815
46	Less: Market Revenues	34,712	35,431	35,325	34,642	31,776	30,351	29,699	29,479	29,477	31,484	30,339	31,367	30,659	30,351	31,488	30,473	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893	29,479	31,488	30,473	30,893
47	**Revenue Requirement**	$ 41,667	$ 41,948	$ 59,816	$ 48,447	$ 53,379	$ 55,927	$ 60,623	$ 62,100	$ 64,610	$ 64,912	$ 67,805	$ 69,919	$ 72,776	$ 75,803	$ 77,281	$ 80,548	$ 82,719	$ 86,598	$ 88,995	$ 93,528	$ 94,054	$ 98,202	$ 101,792	$ 103,992	$ 106,217	$ 107,092	$ 111,577	$ 115,188	$ 119,205	$ 120,923	$ 125,771	$ 129,743	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -

[1] The retirement indicated in this calculation is the total that is needed to fully decommission all costs. Includes COR for the Hennessey 2032 retrofit which is the reason the Plant Marks Facilities are recorded to be fully decommissioned in this scenario.

[2] The retirement indicated in this calculation is the total that is needed to fully decommission all costs. Includes COR for the new 2038C which is the reason the Plant Marks Facilities are recorded to be fully decommissioned in this scenario.

MICHIGAN PUBLIC SERVICE COMMISSION

Case No.: U-21560
Exhibit No.: A-11 (JRC-2)
Page: 1 of 1
Witness: JRCoker
Date: October 2025

Promoted Customer Rate Impacts
($000)

Line No.		2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086
1	Solar with PPA																																																												
2	Revenue Requirement	$ (11.667)	$ (12.954)	$ (12.310)	$ (11.412)	$ (9.743)	$ (9.122)	$ (9.018)	$ (8.963)	$ (8.429)	$ (8.563)	$ (8.318)	$ (8.191)	$ (8.019)	$ (7.737)	$ (7.627)	$ (7.372)	$ (7.193)	$ (6.793)	$ (6.679)	$ (6.441)	$ (6.214)	$ (7.653)	$ (7.609)	$ (7.709)	$ (7.908)	$ (8.125)	$ (8.404)	$ (8.745)	$ (9.007)	$ (9.240)	$ (9.498)	$ (9.705)	$ (9.956)	$ (10.206)	$ (10.392)	$ (10.643)	$ (10.899)	$ (11.109)	$ (11.359)	$ (11.615)	$ (11.865)	$ (12.121)	$ (12.375)	$ (12.626)	$ (12.880)	$ (13.136)	$ (13.389)	$ (13.642)	$ (13.896)	$ (14.150)	$ (14.403)	$ (14.657)	$ (14.911)	$ (15.164)	$ (15.418)	$ (15.672)	$ (15.925)	$ (16.179)	$ (16.432)	$ -	$ -
3	Total Sales (MWh)	36,500,000	36,500,000	36,500,000

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)	Case No. U-21985

DIRECT TESTIMONY

OF

ADAM J. MONROE

ON BEHALF OF

CONSUMERS ENERGY COMPANY

November 2025

Q. Please state your name and business address.

A. My name is Adam J. Monroe, and my business address is 330 Chestnut Street, Cadillac, Michigan 49601.

Q. By whom are you employed and in what capacity?

A. I am employed by Consumers Energy Company ("Consumers Energy" or the "Company") as the Executive Director of Hydro Generation.

Qualifications

Q. Please describe your educational background.

A. In 2006, I received a Bachelor of Science in Civil Engineering from Michigan Technological University. I have been a registered Professional Engineer in the state of Michigan since 2010.

Q. Please describe your business experience.

A. I began my employment with Consumers Energy in 2006 as an Engineering Services Engineer. In 2007, I accepted a position as the River Hydro Dam Safety Engineer and in 2012 I was promoted to River Hydro Chief Dam Safety Engineer. In 2018, my role was retitled to Chief Dam Safety Engineer and in 2021 I was promoted to my current position in which I am responsible for dam safety, management, and operation of Consumers Energy's hydroelectric plants.

Q. Have you previously provided testimony before the Michigan Public Service Commission ("MPSC" or the "Commission")?

A. Yes, I provided testimony in the following MPSC cases:

- Case No. U-21224: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief;

- Case No. U-21389: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief; and

- Case No. U-21585: Application of Consumers Energy for authority to increase its rates for the generation and distribution of electricity and for other relief.

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to support the Company's request to sell its river hydro fleet ("the Facilities") to Confluence Hydro, LLC ("Confluence"), a subsidiary of Hull Street Energy ("Hull Street"). Consumers Energy will transfer the Facilities, including equipment and land, and associated liabilities, by entering into four primary agreements with Confluence: (i) the Purchase and Sale Agreement ("PSA"), the Environmental Indemnity Agreement ("EIA"), the Regulatory Disallowance Agreement ("RDA"), and the Power Purchase Agreement ("PPA"). All such agreements work together to effectuate the transaction.

My direct testimony will specifically:

- Explain the organization charts depicting the current and proposed post transaction corporate structures;

- Explain if there will be any labor force reductions associated with the transaction;

- Provide a description of any proposed safeguards for stabilizing wages and benefits associated with the transaction Bid development, stages, due diligence, negotiations;

- Explain the people that will be transitioning with the transaction;

- Explain whether the proposed action would have an adverse impact on the provision of safe energy service in this state; and

- Provide assessment of Hull Street's safety performance.

Q. Are you sponsoring any exhibits with your direct testimony?

A. No

Q. How are the following sections of your direct testimony organized?

A. My direct testimony is divided into two sections. Section I will describe organization structure and employee matters. Section II will describe the safe operation of the hydro fleet post close.

SECTION I

EMPLOYEE MATTERS

Q. The Facilities are currently operated within the River Hydro Organization of Consumers Energy. Please describe the organization structure of the River Hydro Organization prior to the sale of the Facilities to Confluence.

A. The River Hydro Organization currently consists of 59 core staff (salaried and union positions), which includes active vacancies. This staff is broken down into Operations and Maintenance, Engineering, Dam Safety, and Licensing, all reporting up through the Executive Director of Hydro Generation, which is my current role. The Executive Director of Hydro Generation reports to the Vice President of Generation Operations within Consumers Energy's Electric Supply Organization.

Q. Explain the breakdown between salaried and union positions within the River Hydro Organization.

A. There are a total of 27 salaried employees and 32 union employees within the River Hydro Organization. As noted above, this number includes current vacancies which may be backfilled prior to the closing of the sale.

Q. Please explain any changes to the corporate structure at Consumers Energy as a result of the sale.

A. The River Hydro Organization is part of Consumers Energy and is not an affiliate or subsidiary of Consumers Energy. Therefore, when the River Hydro Organization transitions to Confluence, there will be no changes to the Company's and/or CMS Energy's corporate structure.

Q. Please describe the organization structure for the River Hydro Organization post sale transition.

A. As part of the sale, the entire River Hydro Organization, including all 59 employee positions, will become part of Confluence. As explained above, Confluence is a wholly owned subsidiary of Hull Street and it is expected that, as part of the sale, Confluence will transfer each individual Facility into a wholly owned subsidiary of Confluence.

Q. Please describe if any employees will lose their job or be laid off due to the transaction.

A. There will be no labor reduction because of this transaction at Consumers Energy or within the River Hydro Organization. As part of the sale, each River Hydro Organization employee will be eligible to receive a job offer from Confluence to continue employment with Confluence on comparable terms. Since the terms of employment for the union River Hydro Organization are governed by a Working Agreement (i.e. collective bargaining agreement), those employees will have the option of: (i) transferring to Confluence Hydro or (ii) taking a different position at the Company.

Q. Please explain why it is important that Consumers Energy employee positions transition to Confluence as a part of the sale.

A. Consumers Energy and Confluence both recognize the importance of the people that safely operate, maintain, and support the 13 river hydros. While Confluence's parent, Hull Street, has extensive experience operating hydros, the transfer of the Company's employees to Confluence will further ensure that Confluence will have a world-class, efficient, and safe workforce on day one with the transition of staff. This helps ensure the operational excellence that has been instilled at these facilities over the past 100 years will be passed on to Confluence.

Q. Explain if all Consumers Energy River Hydro Employees will transition to Confluence Hydro at the time of closing the sale.

A. All salaried river hydro employee positions will transition to Confluence Hydro at the time of sale. The salaried employees will not have the option to stay at Consumers Energy. The union river hydro positions will also transition to Confluence Hydro at the time of sale, but, as explained above and in more detail below, per the Working Agreement, the employees in those positions will also have the option to be placed in a new position and remain a Consumers Energy employee.

Q. Explain if there are any additional employees that will transition to Confluence Hydro at the time of sale.

A. Yes, there are additional employees that will be hired into the river hydro organization to support the transition. This includes full-time Consumers Energy employees and contracted employees.

Q What are the incremental employee costs for the additional hydro staff?

A. The incremental employee costs reflect the costs of onboarding additional operation resources to allow for adequate training ahead of the hydro sale closing. These resources are expected to include up to 20 hydro operators at approximately $200K per year per person, six office workers at approximately $150K per year per person and two office workers at $200K per year per person. These are operational costs the Company will incur to support continuity of operations before and after the sale.

Q. What is the Company's proposal regarding the incremental employee costs related to the transaction?

A. The Company proposes to defer the incremental employee costs into a regulatory account. These incremental employee costs are expected to be approximately $4.9 million. The Company further requests to net these costs against the deferred gain on the sale. The method of recovery of this net deferred balance would then be requested in the first electric rate case after the closing of the transaction.

Q. Please explain why Union Employees will have the option to remain Consumers Energy Employees.

A. The Working Agreement between Consumers Energy and the Utility Workers Union of America and its Michigan State Utility Workers Council provides that represented employees have Article VII, Section 9 transfer rights through the final closing date of the sale and Article VII, Section 17 and Appendix 46 placement rights. Represented employees that stay at Consumers Energy post-closing of sale will be placed in a job within 60 miles of their headquarter location.

Q. Please provide a description of any proposed safeguards for stabilizing wages and benefits associated with the transaction.

A. The PSA, as provided in Exhibit A-1 (RTB-1), provides salary and benefits safeguards for the transferred employees to ensure that these employees can continue employment with Confluence on comparable employment terms. For the transferred salaried employees, these employees will receive comparable employment terms for a minimum of a year following sale closing. For the transferred union employees, these employees will continue employment pursuant to the terms of the Working Agreement, which Confluence has agreed to be bound by and assume as part of the sale.

Q. Please explain if there are any agreements in place to ensure employees remain at the Facilities to ensure adequate staffing for safe operation until the closing of the transaction.

A. Yes, to ensure necessary staffing at the Facilities through the closing date, as well as the need to continue to ensure safe operation of the Facilities after the sale, Consumers Energy is providing River Hydro Organization employees with a retention incentive program which will be memorialized in retention agreements with each employee.

Q. Please explain the union employee retention agreement and separation payments.

A. The terms of the union retention agreement are as follows: (i) a bonus of 5% of annual base pay (as of the date the agreement is offered) in exchange for signing the Agreement within the agreed upon number of days of its offer; (ii) a bonus of 95% of annual base pay (as of the final closing of the sale date) if employee agrees to forfeit their Article VII, Section 9 transfer rights through the final closing date of the sale; and (iii) bonus of 50% of annual base pay (as of the final closing of the sale date) if the employee forfeits their Article VII,

Section 17 and Appendix 46 placement rights. These bonus options may be stacked – meaning an eligible employee is eligible to elect each of the three bonuses (totaling 150% of annual base pay). In addition, employees eligible for a pension, but under fifty-five (55) years of age, will receive a one-time payment for the early vesting of such pension and employees eligible for retiree healthcare will receive a one-time payment to supplement loss of such retiree healthcare. Union employees are also eligible for a separation payment per the working agreement.

Q. Please explain the salaried employee retention agreement and separation payments.

A. The salaried employee retention agreement includes: (i) a retention payment of 150% of annual base pay as of the final closing of the sale; (ii) employees eligible for a pension, but under fifty-five (55) years of age, will receive a one-time payment for the early vesting of such pension; (iii) employees eligible for retiree healthcare will receive a one-time payment to supplement loss of such retiree healthcare ; (iv) eligible employee will receive a one-time payment to supplement the loss of non-vested restricted stock; and (v) there is also a payment of 12 weeks of regular straight time pay plus an additional sum equal to one week of regular straight time pay for each complete year of service, up to a maximum of 26 weeks.

SECTION II

SAFETY PERFORMANCE

Q. Please explain whether the proposed action would have an adverse impact on the provision of safe energy service in this state.

A. There is no expected adverse safety impact as a result of this transaction. As a part of the Request for Proposal ("RFP") process, Consumers Energy evaluated potential buyers'

safety records. This included a review of whether the potential buyer had an Owners Dam Safety Program ("ODSP"), experience operating hydroelectric dams, their relationship with the Federal Energy Regulatory Commission ("FERC") and their compliance record with FERC license requirements. As a part of the evaluation, Hull Street supported the safety record and experience to operate the Facilities safely.

In addition, as explained above, Consumers Energy River Hydro Organization employee positions will transition to Confluence as a part of the sale. Confluence will have a world-class, efficient, and safe workforce on day one with the transition of staff. If the Union operations staff elects to stay at Consumers Energy, the Company intends to backfill operator positions in the interim period prior to the close date so that as many River Hydro Organization employees can transition as possible. Consumers Energy has an agreement with the union to hire river hydro operator staff that will not have contractual transfer or placement rights. Their positions will go with the sale of the dams. The plan is to hire these positions filled by January 2026 to ensure they have the proper time to be trained and certified on the operation. This plan will ensure the same operational excellence at the Facilities will continue after the sale closes.

Q. As set forth above, Hull Street is the parent company to Confluence. Please explain Hull Street's experience in safely operating hydroelectric dams.

A. Hull Street has a long track record of successfully owning and operating hydroelectric facilities across North America. This includes the acquisition and improvement of 47 hydro assets within the past decade. Hull Street currently owns one hydroelectric dam, Boott Hydro located in Lowell, Massachusetts. Hull Street maintains an ODSP for the facility and there have been no material dam safety incidents or license violations. In

addition, Hull Street's management team has significant history/experience with safely operating river hydro and other generation assets. Hull Street is also a member of the National Hydropower Association which keeps them informed of industry standards and best practices.

Q. What is the ODSP?

A. The ODSP is required for FERC-licensed hydroelectric facilities to ensure dam safety and compliance with FERC dam safety requirements. The ODSP is intended to ensure that employees, agents, and consultants have a complete understanding and a constant awareness of the need to fully comply with all necessary dam safety measures and requirements. Hull Street has an ODSP in place for its current hydroelectric facility.

Q. Describe FERC's regulation of the Facilities.

A. FERC comprehensively regulates the Facilities under Part I of the Federal Power Act and corresponding regulations. FERC's jurisdiction and authority includes dam safety, environmental protection, and operations. Each Facility is governed by the terms of its specific FERC project license and corresponding documents (e.g. Land Management Plans), which impose a variety of restrictions and obligations on the Company under federal law.

Q. Please describe the FERC regulation of the Facilities post-closing of the sale.

A. All 13 FERC licenses (i.e. one for each Facility) will be transferred to Confluence and will be valid through the end of the existing license period, most of which are set to expire in 2034. This includes all requirements in the FERC licenses for dam safety, operation, land management, and recreation. Confluence will assume all legal responsibility for the hydroelectric projects' condition and operation. Prior to the end of the existing license

period for the facilities, Confluence will be responsible for filing any license renewal applications with FERC for their continued operation.

Q. Please describe if FERC will have a review of Hull Street's safety record.

A. FERC will review Confluence's technical capabilities to operate the facility safely, as well as Confluence's financial ability to safely maintain their hydroelectric projects as a part of the FERC license transfer process. This review will include an assessment of Confluence's existing dam safety program, as well as Confluence's overall technical expertise to safely operate the facilities in accordance with the FERC licenses.

Q. Does this conclude your direct testimony?

A. Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	))))))	Case No. U-21985

DIRECT TESTIMONY

OF

ANGELA THOMPKINS

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025

Q. Please state your name and business address.

A. My name is Angela Thompkins and my business address is 1 Energy Plaza, Jackson, Michigan 49201

Q. By whom are you employed and in what capacity?

A. I am employed by Consumers Energy Company ("Consumers Energy" or the "Company") as the Vice President of Community and Media Relations and Chief Diversity Officer.

Qualifications

Q. Please describe your educational background.

A. In 1998 I received a Bachelor of Science degree from Eastern Michigan University; followed by a Juris Doctor from Thomas M. Cooley Law School in 2002; and an LL.M. in Labor and Employment Law in 2008 from Wayne State University Law School. I am also licensed to practice law in the state of Michigan.

Q. Please describe your business experience.

A. Prior to joining Consumers Energy I held a variety of roles in the legal, automotive, food service industries, and education. These roles included Prosecuting Attorney with the City of Detroit; Labor Relations with DaimlerChrysler, LLC: local and state lobbyist for Chrysler, LLC; Director of Fair Housing for Legal Aid and Defender, Detroit; Human Resources Manager at US Foodservice; and adjunct professor at Henry Ford Community College and Eastern Michigan University.

I began my employment with Consumers Energy in 2013 as a Human Resources Business Partner and held a variety of positions within the Company including: Manager, Diversity and Inclusion; Director of Diversity and Inclusion and Talent Acquisition; Executive Director of Diversity and Inclusion; Vice President and Chief Diversity Officer;

and my current role as Vice President of Community and Media Relations and Chief Diversity Officer.

Q. Please describe the role of the Community Engagement team.

A. The Consumers Energy Community Affairs team consists of 18 Community Affairs Managers across the Company's service territory. The Community Affairs Managers live within the geographical areas they represent. By living in the communities they serve, the Community Affairs Managers can identify and understand the unique needs of each community and provide equitable and sustainable solutions and help remove barriers to access. The team is responsible for building trusted and meaningful relationships with municipal leaders, community influencers, community organizations and serve as a liaison between the Company and the community. As the Company's voice within the communities, the Community Affairs Managers develop relationships to ensure all community groups and voices are heard and include but are not limited to ALICE populations, environmental justice communities, rural areas, and seniors.

Q. Have you previously provided testimony before the Michigan Public Service Commission ("MPSC" or the "Commission")?

A. Yes. I testified in the Company's Electric Rate Case, Case No. U-21585.

Q. What is the purpose of your direct testimony in this proceeding?

A. The purpose of my direct testimony is to support the Company's request to sell its river hydro fleet to Confluence Hydro, LLC ("Confluence"). Consumers Energy has agreed to sell the river hydro generation fleet assets and transfer the associated liabilities by entering into four agreements with Confluence, a fund company of Hull Street Energy. The Purchase and Sale Agreement, the Environmental Indemnity Agreement, the Regulatory

Disallowance Agreement, and the Power Purchase Agreement work together to effectuate the transaction. Toward that end I will explain the Company's two-year community engagement strategy with the communities surrounding the Company's river hydro assets to ensure all voices were heard and considered in the Company's decision making process.

Q. Are you sponsoring any exhibits with your direct testimony?

A. Yes, I am sponsoring the following exhibits:

Exhibit A-12 (AT-1)	Economic Impact Study for Alcona Dam;
Exhibit A-13 (AT-2)	Economic Impact Study for Calkins Bridge Dam;
Exhibit A-14 (AT-3)	Economic Impact Study for Cooke Dam;
Exhibit A-15 (AT-4)	Economic Impact Study for Croton Dam;
Exhibit A-16 (AT-5)	Economic Impact Study for Five Channels Dam;
Exhibit A-17 (AT-6)	Economic Impact Study for Foote Dam;
Exhibit A-18 (AT-7)	Economic Impact Study for Hardy Dam;
Exhibit A-19 (AT-8)	Economic Impact Study for Hodenpyl Dam;
Exhibit A-20 (AT-9)	Economic Impact Study for Loud Dam;
Exhibit A-21 (AT-10)	Economic Impact study for Mio Dam;
Exhibit A-22 (AT-11)	Economic Impact Study for Rogers Dam;
Exhibit A-23 (AT-12)	Economic Impact Study for Tippy Dam;
Exhibit A-24 (AT-13)	Economic Impact Study for Webber Dam; and
Exhibit A-25 (AT-14)	2024 Prosperity Group Final Report.

Q. Were these exhibits prepared by you or under your direction and supervision?

A. Exhibits A-12 (AT-1) through A-25 (AT-14) were extracted from Consumer's Energy's records kept in the ordinary course of business and are an accurate copy of that record.

SECTION I

COMMUNITY ENGAGEMENT STRATEGY

Q. How does Consumers Energy proactively engage communities?

A. Consumers Energy is deeply embedded in the communities it serves. The Consumers Energy Community Affairs team members serve on over 130 community boards. On those boards, the Company cultivates trusting relationships and leverages the opportunity to inform, educate, and engage with community leaders regarding issues and topics involving the Company and its customers. These memberships allow for two-way engagement with members in their respective communities.

Q. Please describe the Company's Community Engagement plan related to the request to sell the hydroelectric fleet to Confluence.

A. In early 2021, Consumers Energy began discussions about the future of its 13 hydroelectric dams located throughout the Lower Peninsula of Michigan. These discussions eventually led to an effort by Consumers Energy to make public its intent to decide on the future of these Facilities from three potential options. As part of the discussion and the plan to go public, it was determined there was a need for a comprehensive communications plan and a community engagement plan for each dam that would guide Consumers Energy in how it would interact with and work with each community regarding the three future options. Consumers Energy retained Public Sector Consultants ("PSC"), a Lansing-based nonpartisan research and leading consulting firm that specializes in public engagement, to help develop a community engagement plan and to lead community conversations to better understand the impact of Consumers Energy's hydro Facilities. The goal of the plan was to ensure Consumers Energy created an opportunity for all interested stakeholders to have

a voice in the process in a meaningful way. Consumers Energy committed to transparency throughout this process. As such, the Company, with assistance from PSC, developed "The Future of Hydroelectric in Michigan" website as a place to provide up-to-date information and details of the information provided at each community meeting. These stakeholder conversations began in 2022 and concluded in 2024 with a final report (Exhibit A-25 (AT-14)) that summarizes the input and feedback from each community.

SECTION II:

COMMUNITY ENGAGEMENT – YEAR ONE

Q. Please describe the Company's Community Engagement activities in 2022.

A. Consumers Energy and PSC met with and received detailed opinions and feedback from United States Forest Service, Great Lakes Fishery Commission, Michigan Department of Natural Resources, and the Michigan Hydro Relicensing Coalition. Additionally, Consumers Energy and PSC held public meetings at all 13 dams starting in late August and ending in mid-October. The 13 meetings were attended by approximately 1,700 people and Consumers Energy received approximately 570 comments via email and/or online. The key details provided at each meeting were:

- Overview of Consumers Energy Hydro Operations and key areas of importance such as safety, regulatory, environment and community;
- The disclosure and overview of the three future scenarios; and
- Timeline of Hydro Strategy.

PSC conducted property-owner surveys to residents within 100 feet of Consumers Energy's FERC boundary. 1,381 surveys were completed and returned resulting in a 60% return rate or 1,381 out of 2,312 landowners. At the request of the public and community leaders, Consumers Energy contracted with PSC to complete an economic contribution plan for

each dam as well as a statewide economic contribution analysis. (Exhibits A-12 (AT-1) through Exhibit A-24 (AT-13)).

Over year one, Consumers Energy held in-person public meetings for all 13 dams with a focus on providing an overview of Hydro Operations, the disclosure and overview of the three future scenarios, and an overall timeline for the future Hydro Strategy.

COMMUNITY ENGAGEMENT – YEAR TWO (2023)

Q. Please describe the Company's Community Engagement activities in 2023.

A. Consumers Energy and PSC created a community engagement plan to develop local prosperity groups where the dams are located as a means for getting more in-depth information about the local sentiment and needs for each of the potential options and included stakeholders who were both for and against the dams. The feedback from the prosperity groups would be used to inform and influence the Company's decision. Based on the number of inquiries about the option to sell all 13 hydro Facilities, Consumers Energy investigated the possibility of a sale as one of the options. Throughout 2023, the Company worked to develop a Request for Proposals ("RPFs") that would entice bids for the purpose of determining if sale was truly an option to be considered. In July, PSC completed economic contribution studies for all 13 hydro Facilities with the goal of determining the economic contribution these Facilities provide to the local economy. The data provided included the gross regional product, the number of jobs, and the amount of local, state, and federal tax effects from recreational and related spending at the Facilities. Consumers Energy and PSC held public meetings for all 13 dams but combined some dams into one meeting resulting in a total of 10 public meetings being held in person.

- The key details provided at the meetings were:
  - Overview of 2022 meetings;

- Overview of adjacent landowner and engagement survey, economic contribution study for that dam, and the statewide economic contribution analysis;
- Update on Hydro Strategy including the external funding options and the investigation into sale of the dams being a new option;
- Discussed Hydro impact on residential, business, and industrial customers; and
- Discussed the development of a community prosperity meeting for 2024.

Consumers Energy and PSC also held two virtual meetings. The meetings covered the same context as the individual hydro meetings, but with a more statewide focus and with a goal of reaching non-dam communities and stakeholders.

Over the course of year two Consumers Energy held 10 in-person public meetings and two virtual public meetings. The meetings focused on an overview of the 2022 public meetings, discussion on external funding options, the investigation into the sale of the dams, the impact to customers and the development of community prosperity groups. In addition, PSC completed a contribution study for each dam, a statewide economic contribution analysis, and community engagement report for each dam.

COMMUNITY ENGAGEMENT – YEAR THREE (2024)

Q. Please describe the Company's Community Engagement activities in 2024.

A. PSC completed economic impact studies for all 13 hydro Facilities with the goal of determining the impact a partial removal or full removal of the dam would have on the local economy. The data provided included the gross regional product, the number of jobs, and the amount of local, state, and federal tax effects from recreational and related spending at the Facilities. The resulting data for each dam reflects a significant negative impact. However, PSC observed that over the long term, recreational activity is likely to return.

Consumers Energy and PSC worked with the communities at the 13 dams to develop prosperity groups, organized by river:

- Au Sable River: Cooke, Foote, Loud and Five Channels dams
- Au Sable River: Mio dam
- Au Sable River: Alcon dam
- Muskegon River: Rogers, Croton and Hardy dams
- Manistee River: Hodenpyl and Tippy dams
- Kalamazoo River: Calkins Bridge dam
- Grand River: Webber dam

Four meetings were held with each prosperity group. Each meeting provided Consumers Energy with the ability to provide updates and answer questions regarding the Hydro Strategy. The key focus of each meeting was to present a question with a focus on the following:

- Meeting 1: What are the existing strengths/assets in the community?
- Meeting 2: Which strengths/assets can we build upon with the dam? Without the dam?
- Meeting 3: What is Consumers Energy's role in helping us reach the community's aspirations?
- Meeting 4: How will we reach our community's aspirations?

A final report was developed and provided to the public in December 2024. (Exhibit A-25 (AT-14)). Closing out 2024, Consumers Energy informed the prosperity groups that the Company was working through the RFPs received and determining which, if any, were viable potential buyers. Consumers Energy made a commitment to full transparency and stated that the Company would inform the prosperity groups once a decision was made.

COMMUNITY ENGAGEMENT – YEAR FOUR (2025)

Q. Please describe the Company's Community Engagement activities in 2025.

A. In April, PSC sent the prosperity groups an email providing an update on the Hardy Dam Spillway project and how Consumers Energy was implementing a temporary pause in construction due to the current RFP negotiations. In June, PSC sent an email to the prosperity groups providing an update on the RFP process stating that (i) Consumers Energy believed a sale of the dams to be the best path forward for customers and (ii) negotiations were in progress, although no final decision has been reached. In September, prior to a public announcement, Consumers Energy hosted a virtual meeting with all seven prosperity groups and informed the groups of the agreement with Confluence to buy all 13 dams. Throughout the remainder of the year, Consumers Energy plans to host in-person meetings with the communities to answer questions and introduce members of Confluence operations and leadership teams. Consumers Energy also plans to meet with each of the seven prosperity groups.

Q. Please describe Exhibit A-12 (AT-1) (Alcona).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Alcona Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Alcona Dam include:

- A reduction of $1 million in gross regional product and 41 jobs; and
- A reduction of $376,041 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-13 (AT-2) (Calkins).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Calkins Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Calkins Dam include:

- A reduction of $2.9 million in gross regional product and 41 jobs; and
- A reduction of $587,668 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

The partial removal of the dam would also impact adjacent property values, including:

- A reduction of $24.5 million in market value to adjacent properties; and
- A reduction of $389,643 in local and state property tax revenue due to the decreased market value.

The full removal of the dam would also impact adjacent property values, including:

- A reduction of $35.6 million in market value to adjacent properties; and
- A reduction of $507,303 in local and state property tax revenue due to the decreased market value.

Q. Please describe Exhibit A-14 (AT-3) (Cooke).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Cooke Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Cooke Dam include:

- A reduction of $1.3 million in gross regional product and 40 jobs; and
- A reduction of $423,383 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-15 (AT-4) (Croton).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Croton Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Croton Dam include:

- A reduction of $629,499 in gross regional product and 15 jobs;
- A reduction of $187,095 in local, county, state, and federal taxes through direct, indirect, and induced; and
- Tax effects from recreational spending.

The partial or full removal of the dam would also impact adjacent property values, including:

- A reduction of $25.3 million in market value to adjacent properties; and
- A reduction of about $372,837 in local and state property tax revenue due to the decreased market value.

Q. Please describe Exhibit A-16 (AT-5) (Five Channels).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Five Channels Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Five Channels Dam include:

- A reduction of 92,476in gross regional product and 3 jobs; and
- A reduction of $29,183 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-17 (AT-6) (Foote).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Foote Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Foote Dam include:

- A reduction of $4.7 million in gross regional product and 151 jobs; and
- A reduction of $1.6 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-18 (AT-7) (Hardy).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Hardy Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Hardy Dam include:

- A reduction of $10.7 million in gross regional product and 251 jobs; and
- A reduction of $3.1 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

The partial or full removal of the dam would also impact adjacent property values, including:

- A reduction of $237,503 in market value to adjacent properties; and
- A reduction of $2,740 in local and state property tax revenue due to the decreased market value.

Q. Please describe Exhibit A-19 (AT-8) (Hodenpyl).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Hodenpyl Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed

dozens of interviews with local public officials, recreational asset manager,s and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Hodenpyl Dam include:

- A reduction of $6.8 million in gross regional product and 167 jobs; and
- A reduction of $1.9 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-20 (AT-9) (Loud).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Loud Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Loud Dam include:

- A reduction of $146,927 in gross regional product and 4 jobs; and
- A reduction of $46,341 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-21 (AT-10) (Mio).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Mio Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local

stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Mio Dam include:

- A reduction of $1.5 million in gross regional product and 39 jobs; and
- A reduction of $897,308 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

The partial or full removal of the dam would also impact adjacent property values, contributing:

- A reduction of $689,408 in market value to adjacent properties; and
- A reduction of $9,906 in local and state property tax revenue due to the decreased market value.

Q. Please describe Exhibit A-22 (AT-11) (Rogers)

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Rogers Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Rogers Dam include:

- A reduction of $363,395 in gross regional product and 11 jobs; and
- A reduction of $110,316 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

The partial removal of the dam would also impact adjacent property values, including:

- A reduction of $6,709,742 in market value to adjacent properties; and
- A reduction of $95,763 in local and state property tax revenue due to the decreased market value.

The full removal of the dam would also impact adjacent property values, including:

- A reduction of $12,768,166 in market value to adjacent properties; and
- A reduction of $104,426 in local and state property tax revenue due to the decreased market value.

Q. Please describe Exhibit A-23 (AT-12) (Tippy).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Tippy Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Tippy Dam include:

- A reduction of $3 million in gross regional product and 64 jobs; and
- A reduction of $862,909 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

Q. Please describe Exhibit A-24 (AT-13) (Webber).

A. This exhibit contains a comprehensive report, conducted by a third party, to analyze the impacts of partial or full removal of the Webber Dam on the economies surrounding the river hydroelectric facility. The economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. The consultant completed dozens of interviews with local public officials, recreational asset managers, and local stakeholders as part of the data collection process. The potential economic impacts of the partial or full removal of the Webber Dam include:

- A reduction of $281,817 in gross regional product and 7 jobs; and
- A reduction of $83,332 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending.

The partial or full removal of the dam would also impact adjacent property values, contributing:

- A reduction of $1.1 million in market value to adjacent properties; and
- A reduction of $9,943 in local and state property tax revenue due to the decreased market value.

Q. Please explain Exhibit A-25 (AT-14) (Prosperity Group Final Report).

A. The 2024 prosperity group final report consists of feedback from the seven community stakeholder groups tasked with generating their ideas of community prosperity under three different scenarios for the river hydros—whether the river hydro is relicensed, sold, or decommissioned—and in so doing, provide counsel to the Company. Guided by facilitators, prosperity group members provided their perspectives and honed their recommendations for the different scenarios in multiple meetings convened between April and November 2024. The framing questions used to shape the prosperity groups' feedback for each of the three possible scenarios is listed below.

1. Relicensing—How would the prosperity group like Consumers Energy to build a community benefits package in the next relicensing period?
2. What would the prosperity group like Consumers Energy to ask for on behalf of the community should a sale occur?
3. Decommissioning – What are the key investments the prosperity group would like Consumers Energy to make to support the long-term prosperity of the community post-impoundment?

Through various group and individual exercises, facilitated discussions, and presentations on topics such as rural economic development, dam removal and river restoration, and fisheries and wildlife, group members identified priorities for each scenario along with key

actions and launch steps. These priorities were shared with Consumers Energy and taken under advisement as the Company considered its long-term strategy for the river hydro fleet.

In summary, Consumers Energy supported the creation of seven prosperity groups for each river hydro community composed of diverse stakeholders and led by community-based conveners. The Company recognizes the economic contribution the dams and reservoirs have created for communities, and wants to be a partner in supporting community prosperity and demonstrating its long-term commitment to communities. Consumers Energy seeks to build lasting relationships for local prosperity during and after it makes this decision. Consumers Enegy heard from hundreds of people at community meetings in person, plus it has continued to receive input from stakeholders to this day. The Company respects that there are a wide range of opinions about what Consumers Energy might do, and that highlights the role that dams and reservoirs play in shaping the culture and the economy of many Michigan communities. A majority of people have encouraged the Company to find a solution that preserves the reservoirs.

CHARITABLE CONTRIBUTIONS

Q. Please describe Consumers Energy's charitable giving program.

A. Consumers Energy has a long-standing history of supporting Michigan communities, including through the Consumers Energy Foundation, which has been active since 1990.

Q. Will Consumers Energy continue charitable contributions and community support if the sale is approved?

A. The Company's commitment to charitable giving and community support is independent of any specific transaction or energy project. Consumers Energy's charitable efforts have been and will continue to be focused on supporting local needs. These contributions align

with the Company's three focus areas: People, Planet, and Prosperity, and are delivered through grants, sponsorships, and employee volunteerism. Consumers Energy's employee volunteer programs and matching grants to causes and communities that employees care about will remain in place. CMS Energy and Consumers Energy Foundation Programs for Employees and Retirees do not change with the sale of the hydros. These programs include matching gifts, volunteer investment grants, and caring for community grants that can be applied to eligible nonprofit organizations based in Michigan and in the U.S.

Q. Does this conclude your direct testimony?

A. Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other Relief	)	Case No. U-21985

EXHIBITS

OF

ANGELA THOMPKINS

ON BEHALF OF

CONSUMERS ENERGY COMPANY

October 2025



Alcona Dam Economic Impact Study

PSC



PUBLIC SECTOR CONSULTANTS

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Prepared for

Consumers Energy
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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
ALCONA DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 13
Property Value Analysis 16
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

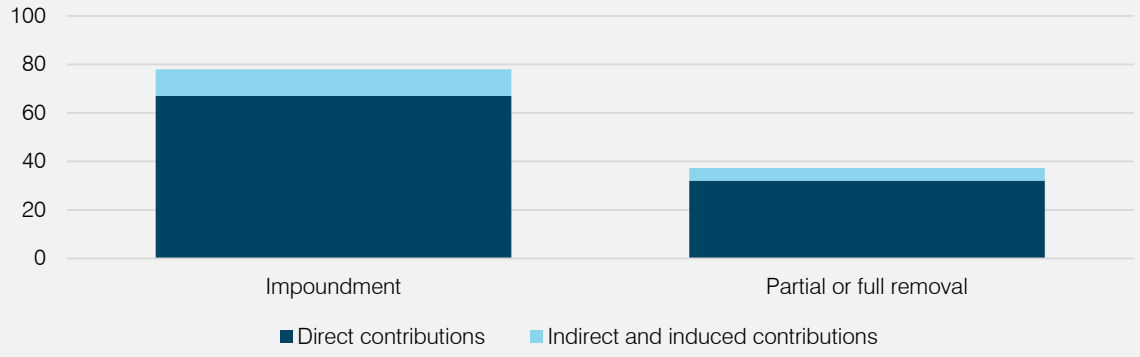
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

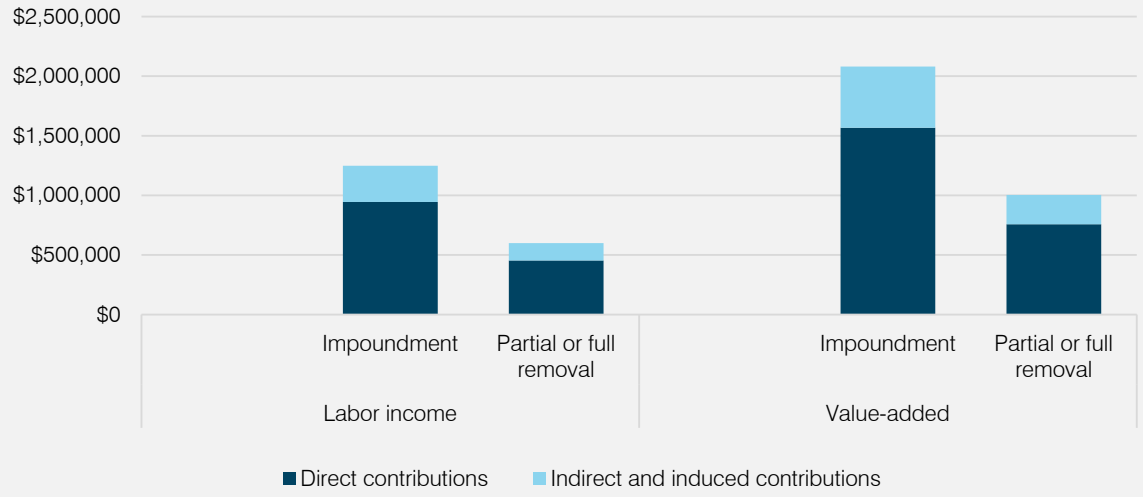
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Alcona Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 41 fewer jobs in the region and a $1 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

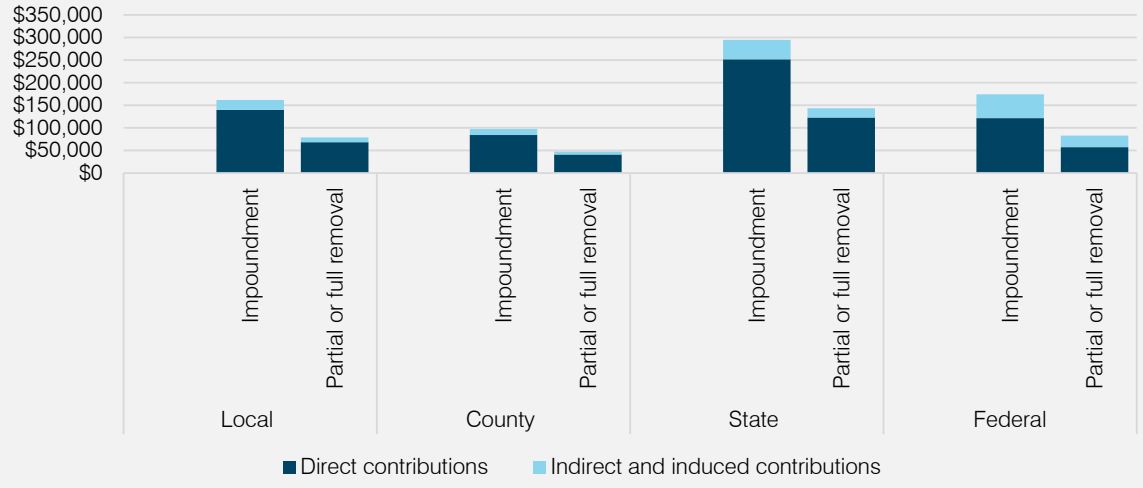
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $376,041 fewer contributions in total annual tax revenue, with $284,336 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Alcona County Equalization Department for the tax (calendar) year 2022. In other studies of Consumers dams, PSC conducted a property analysis to estimate the impact of partial and/or full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Alcona Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

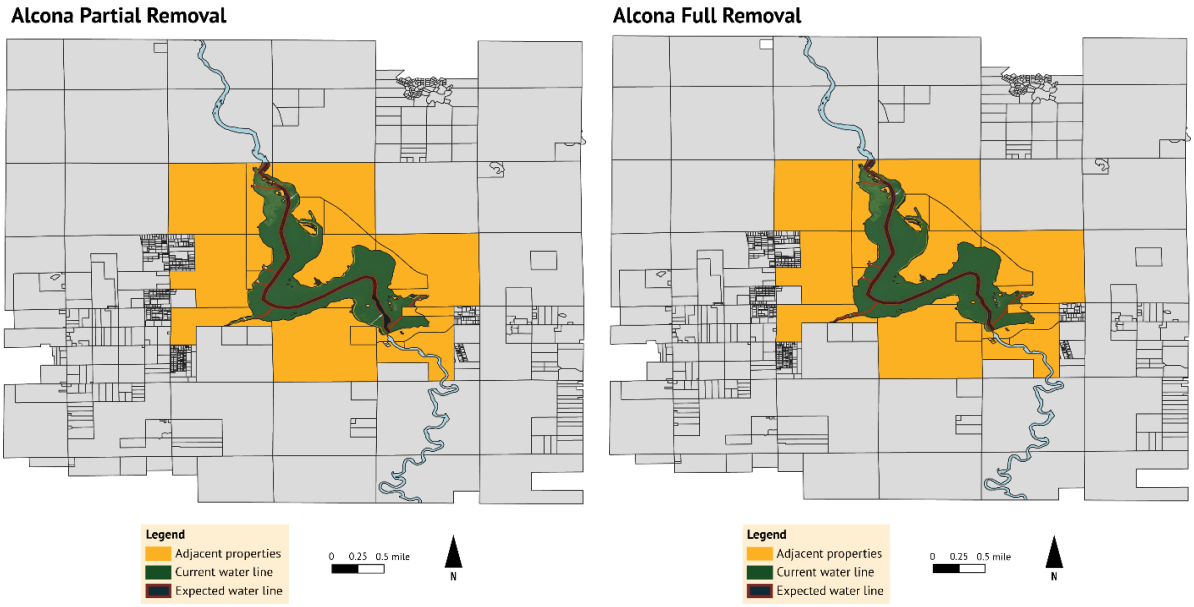
Alcona Dam is one of six Consumers Energy hydroelectric dams on the Au Sable River in the northwestern Lower Peninsula. Surrounded by the Huron National Forest, it is about three miles west of Glennie, Alcona County, in Curtis Township. Home to approximately 1,200 individuals, Curtis Township represents about one-tenth of the county's total population. Alcona Dam is the longest of Consumers Energy's 13 hydroelectric dams at 4,820 feet. It is 60 feet high and creates an impoundment, Alcona Dam Pond, of approximately 1,075 acres.

Environmental Context

While no decision has been made on the Alcona Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



The historic survey maps for the Alcona Dam Pond are limited but indicate that larger areas of uplands are likely to form in the lower impoundment (near the current dam). There is propensity for wetland formation between the river bends in the lower impoundment unless specifically separated with impounded sediment fill. Based on the MNFI wetland viewer, the upper impoundment would also likely have significant wetland formation where prolific wetland complexes have been identified. Given the impoundment's size, upland areas would be expected to form in the wider impoundment areas with selective wetland formation near tributaries, inside channel bends, and lower elevations within the restored topography.

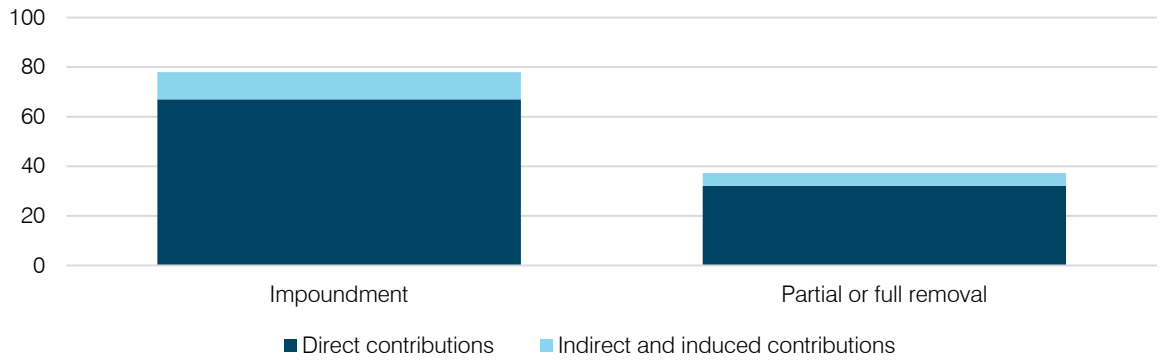
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

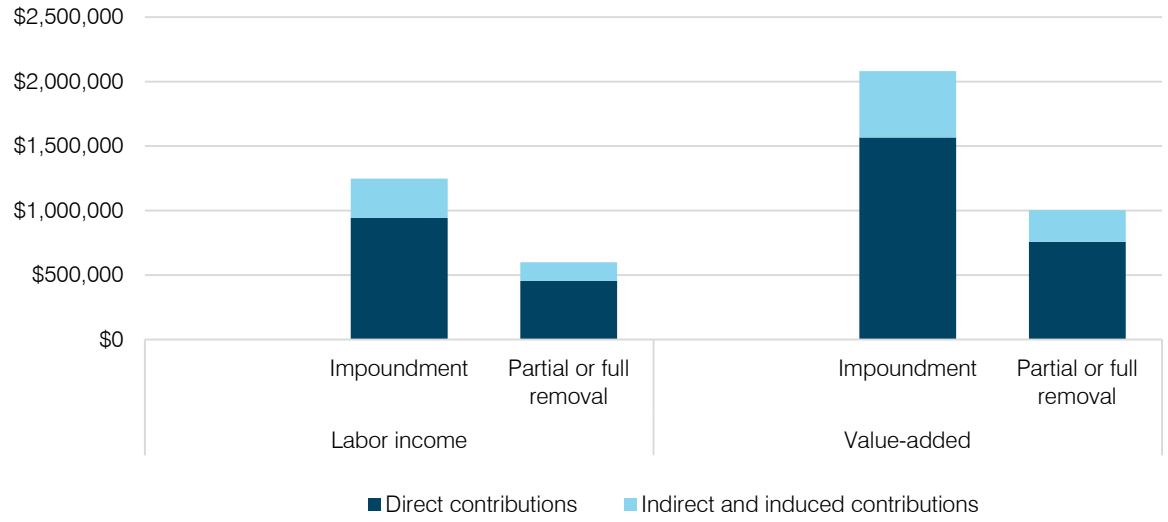
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Alcona Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 41 fewer jobs in the region and a $1 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

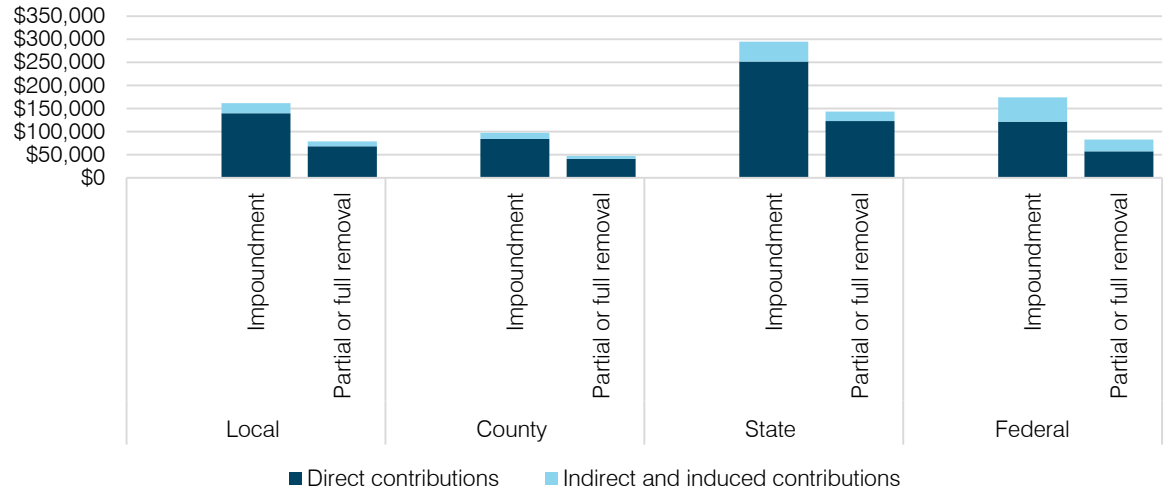
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $376,041 fewer contributions in total annual tax revenue, with $284,336 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 7. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Alcona Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

PSC compiled assessed and taxable values from the Alcona County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on impoundment-adjacent properties. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Alcona Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Alcona Dam, which includes:

- A reduction of $1 million in gross regional product and 41 jobs
- A reduction of $376,041 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Calkins Bridge Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
CALKINS BRIDGE DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

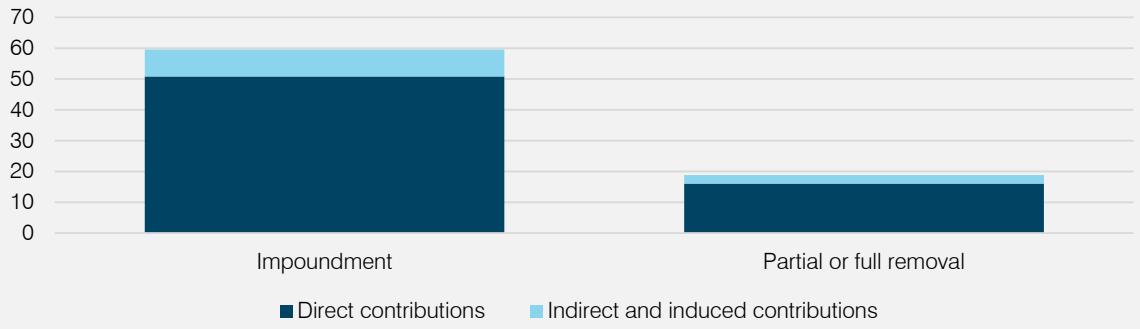
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's Methodology section.

Regional Economic and Employment Contributions

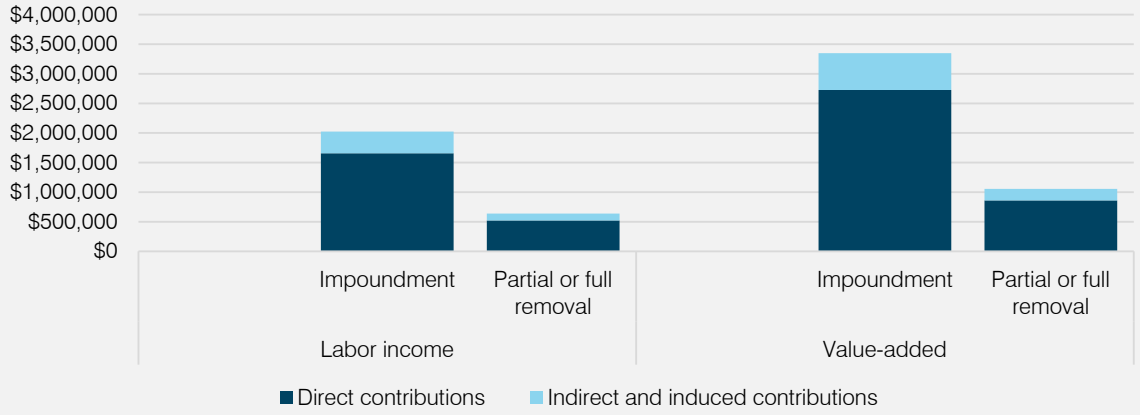
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Calkins Bridge Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 41 fewer jobs in the region and a $2.9 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

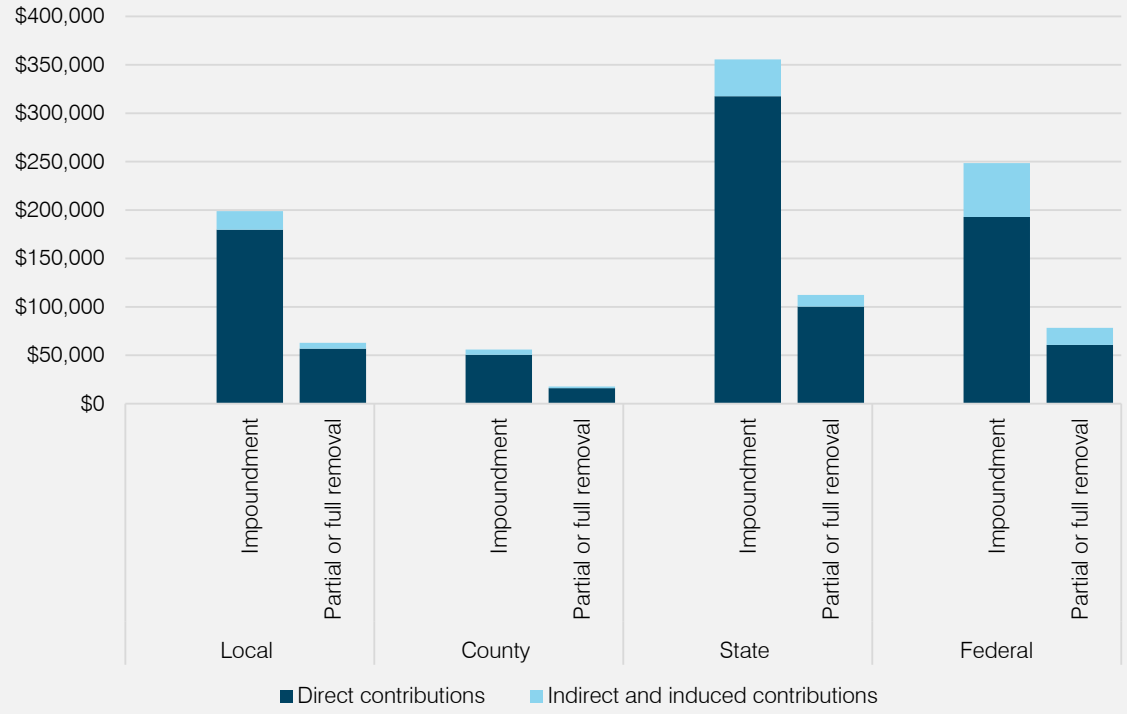
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $587,668 fewer contributions in total annual tax revenue, with $417,470 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Partial Removal	Full Removal
Number of Properties Analyzed	460	460
Expected Net Property Value Impacts		
Assessed value	-$12,269,842	-$17,785,492
Market value[1]	-$24,539,684	-$35,570,984
Expected Net Property Tax Revenue Impacts[2]		
Taxable value	-$9,397,994	-$13,755,448
Tax revenues	-$389,643	-$570,303
Average millage	41.460	41.460

Sources: Allegan County Equalization Department; PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's Methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g., partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Calkins Bridge Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Calkins Bridge Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Calkins Bridge Dam, or Allegan Hydroelectric Plant, is the only Consumers Energy hydroelectric dam on the Kalamazoo River. Located in Valley Township, with a population of about 1,800, the Calkins Bridge Dam is near Allegan State Game Area, a 50,000-acre forest. Calkins Bridge Dam was completed in 1935. It is about 30 feet tall and about 1,335 feet in length. The Calkins Bridge Dam impoundment is known as Lake Allegan and is approximately 1,600 acres in area.

Environmental Context

While no decision has been made on the Calkins Bridge Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal.

Partial and full removal scenarios for the Calkins Bridge Dam are likely to produce significantly different environmental conditions for the current impoundment, particularly on its lower end near the dam. A partial removal of the dam is likely to maintain a sizable impoundment within the existing lower impoundment area. The bottomlands exposed in the lower impoundment that are closer to the existing dam would be expected to form as upland areas. Within the middle and upper impoundment, a mix of wetland and upland habitat types is expected to form. Wetlands will likely form along inside bends of the restored channel, along tributaries entering the impoundment, and near where existing adjacent wetland complexes are present and would likely drain toward the restored channel.

A full dam removal is likely to produce significantly more upland habitat formation in the lower impoundment area than would a partial removal. Neither the historic survey of the dam nor the MNFI wetland viewer indicate wetland adjacent to Lake Allegan or a history of wetland habitat types within the

impoundment. Wetland habitat is expected to form along the inside bends of the restored river channel in the lower impoundment and the same mix of wetland and upland habitat types is expected in the middle and upper impoundment as in the partial dam removal scenario.

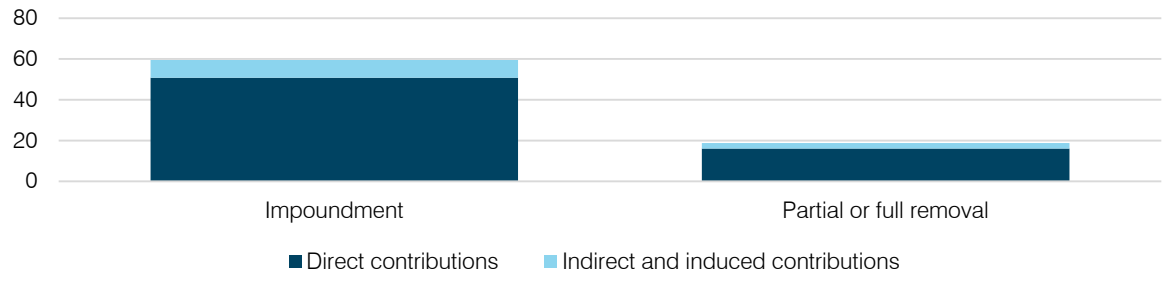
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding Lake Allegan. To align with the previously released contribution study, PSC also estimated Airbnb rental costs and occupancy in this study because the analysis did not identify any impoundment-adjacent overnight or seasonal camping facilities. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

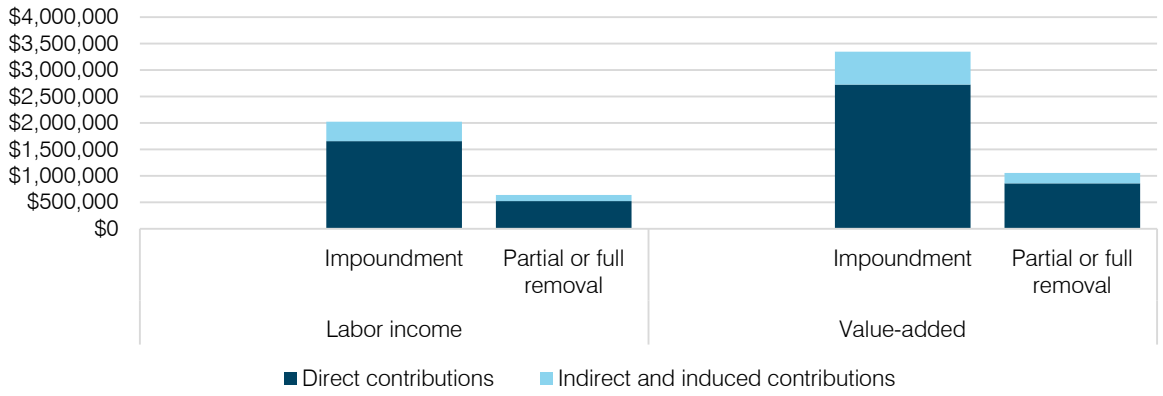
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. As detailed in the Methodology section of this report, PSC analysis does not make assumptions about what actions individuals, businesses, or organizations would take in response to a partial or full dam removal, so the results of a partial dam removal analysis are likely to be similar to those of a full dam removal scenario in the short term. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Calkins Bridge Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 41 fewer jobs in the region and a $2.9 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

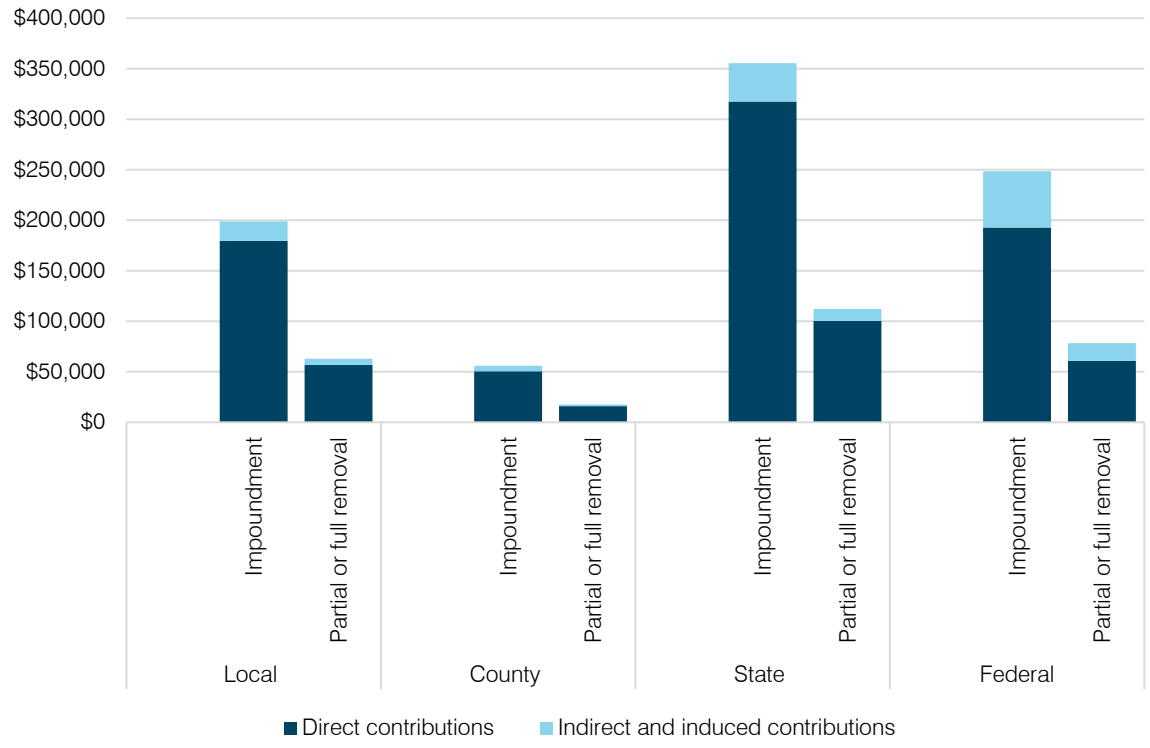
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $587,668 fewer contributions in total annual tax revenue, with $417,470 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 7. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Lake Allegan, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

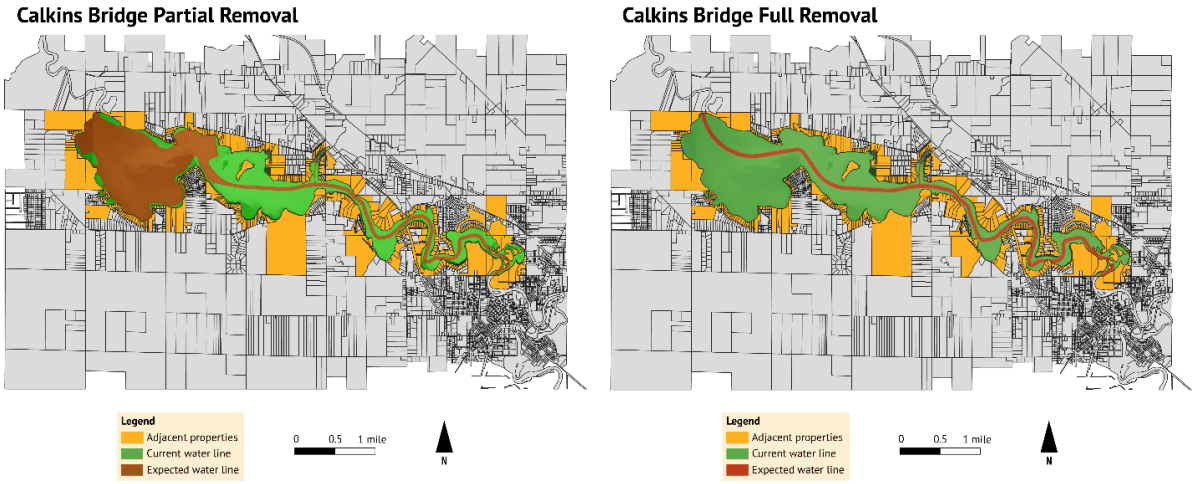
Property Value Analysis

Lake Allegan has 460 adjacent residential lots that likely benefit from access to the current impoundment. To what extent residential property values would be affected by a partial or full dam removal depends on a property's proximity to the resulting water's edge. This is because relative to a full dam removal, a partial removal retains a small impoundment that extends the water's edge to more properties. Exhibit 8 shows two maps of property plats around Lake Allegan, one depicting the extent of the expected water line under a partial dam removal and one showing the same under a full dam removal. The expected extant of the water body after dam modification is shown by the green and blue insert. All other points along the river system are assumed to be invariant between the two scenarios and from the current relationship with the water system.

PSC determined the potential net change in property values and associated annual property tax impact of the proposed dam modifications. These are highlighted in Exhibit 9. Accordingly, the relatively smaller impoundment expected with a partial dam removal will provide waterfront access to more properties than under a full removal. Because more lots will have greater water proximity than with full removal, the partial-removal scenario would be expected to have a lesser overall negative effect on overall residential property values and annual residential property tax revenues. Because there are residential properties differentially impacted by the partial and full dam removal scenarios, this assessment anticipates that the partial and full dam removal scenarios will have measurable differences in effects. As Exhibit 9 indicates,

460 impoundment-adjacent properties will experience a cumulative reduction in market values of around $24,539,684 under a partial dam removal and $35,570,984 under a full removal. Similarly, annual residential property tax revenues are expected to decrease by about $389,643 or $570,303 under the partial and full removal scenarios, respectively.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Partial Removal	Full Removal
Number of Properties Analyzed	460	460
Expected Net Property Value Impacts		
Assessed value	-$12,269,842	-$17,785,492
Market value[3]	-$24,539,684	-$35,570,984
Expected Net Property Tax Revenue Impacts[4]		
Taxable value	-$9,397,994	-$13,755,448
Tax revenues	-$389,643	-$570,303
Average millage	41.460	41.460

Sources: Allegan County Equalization Department; PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Calkins Bridge Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Calkins Bridge Dam, which includes:

- A reduction of $2.9 million in gross regional product and 41 jobs
- A reduction of $587,668 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial removal of the dam will also impact adjacent property values, including:

- A reduction of $24.5 million in market value to adjacent properties
- A reduction in $389,643 in local and state property tax revenue due to the decreased market value

The full removal of the dam will also impact adjacent property values, including:

- A reduction of $35.6 million in market value to adjacent properties
- A reduction in $507,303 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment adjacent will change after becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Cooke Dam Economic Impact Study

PSC



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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
COOKE DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

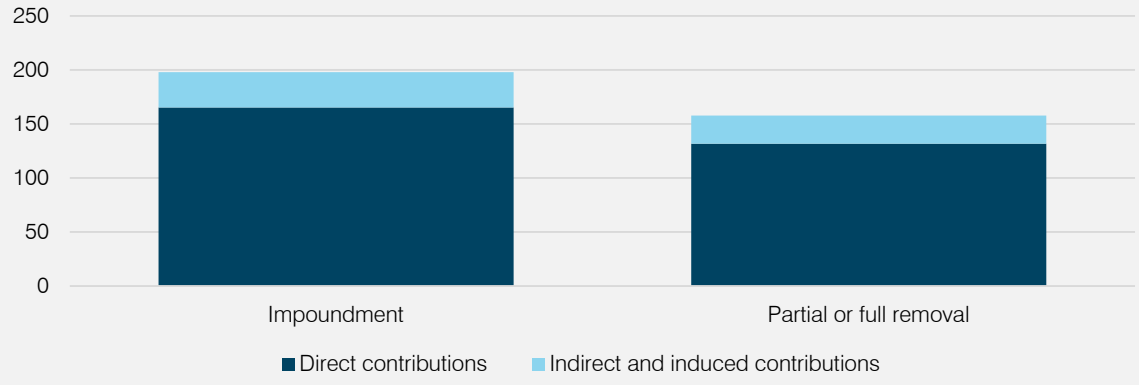
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

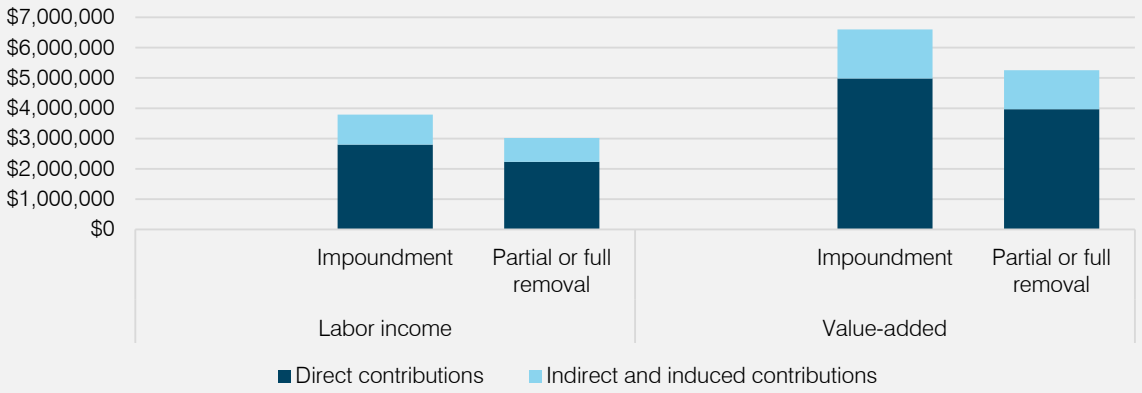
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Cooke Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 40 fewer jobs in the region and a $1.3 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

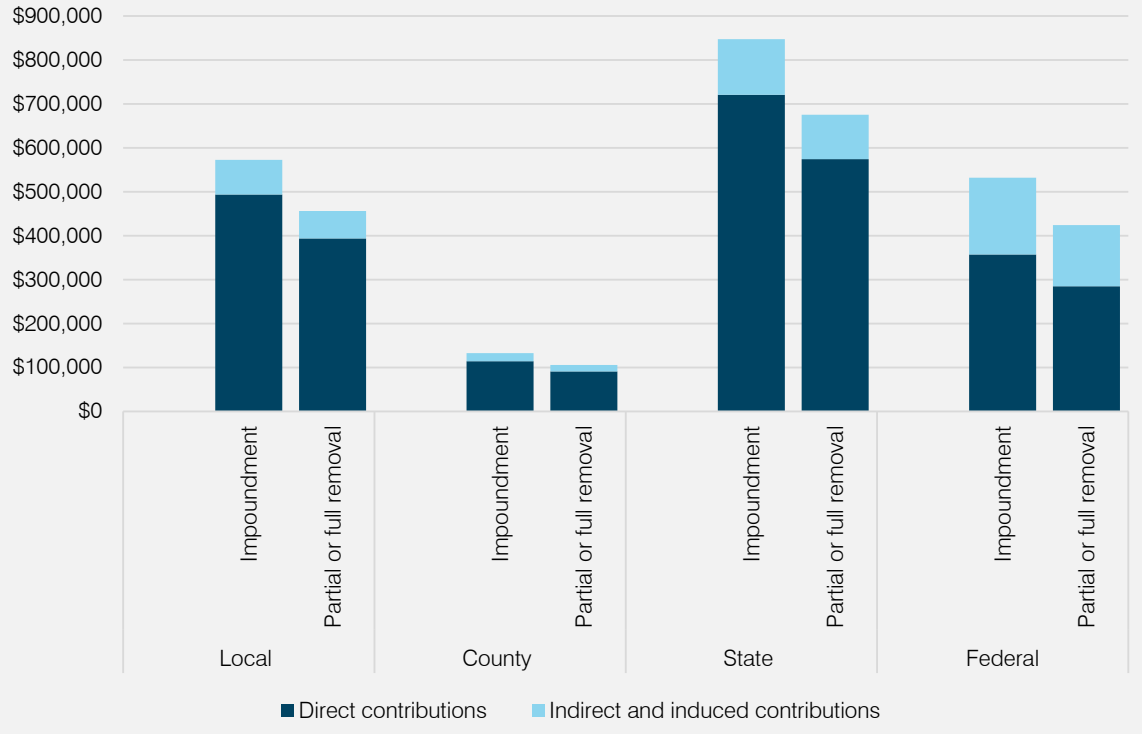
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $423,383 fewer contributions in total annual tax revenue, with $315,283 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Cooke Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

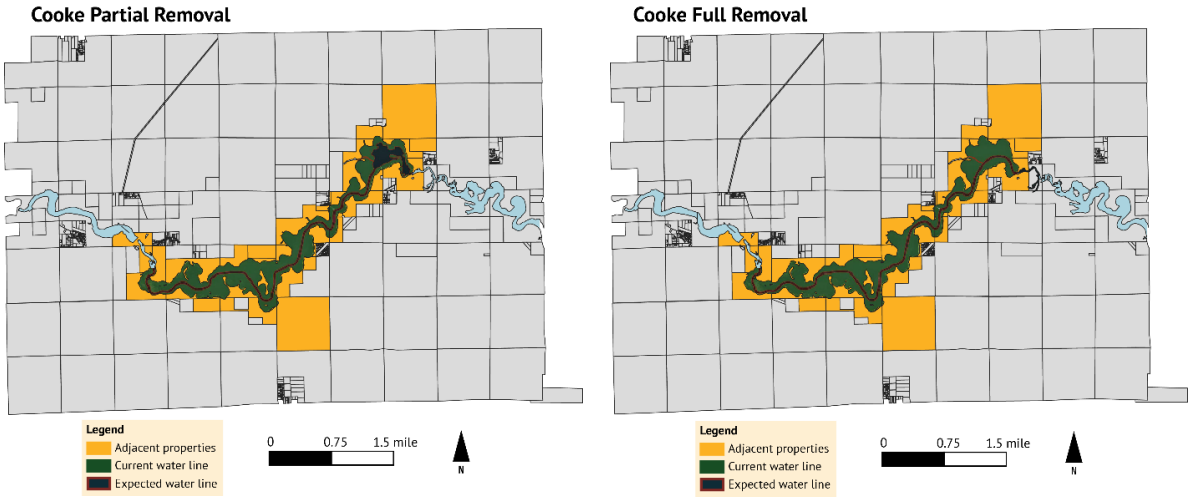
Completed in 1911, Cooke Dam was the first of the six Au Sable River dams to be constructed. Like most of the others, Cooke Dam is located in Oscoda Township, Iosco County, and is surrounded by Huron National Forest. It is situated east of Five Channels Dam and west of Foote Dam. It is about 50 feet tall and 900 feet in length. Cooke Dam Pond is approximately 1,700 acres in area, making it the fourth largest impoundment created by one of the 13 Consumers hydroelectric dams in Michigan.

Environmental Context

While no decision has been made on the Cooke Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



There would likely be few differences in environmental shifts between a partial or full removal of Cooke Dam. The MNFI wetland map viewer indicates a few areas where wetland habitat would be expected to form due to adjacent wetlands, including areas on the western and eastern ends of the impoundment. Wetlands would also be expected to form along the water's edge of the restored river channel, within inside bends, and where tributaries enter the former impoundment. The remainder of the impounded area would potentially form upland habitat.

Economic Impact Analysis

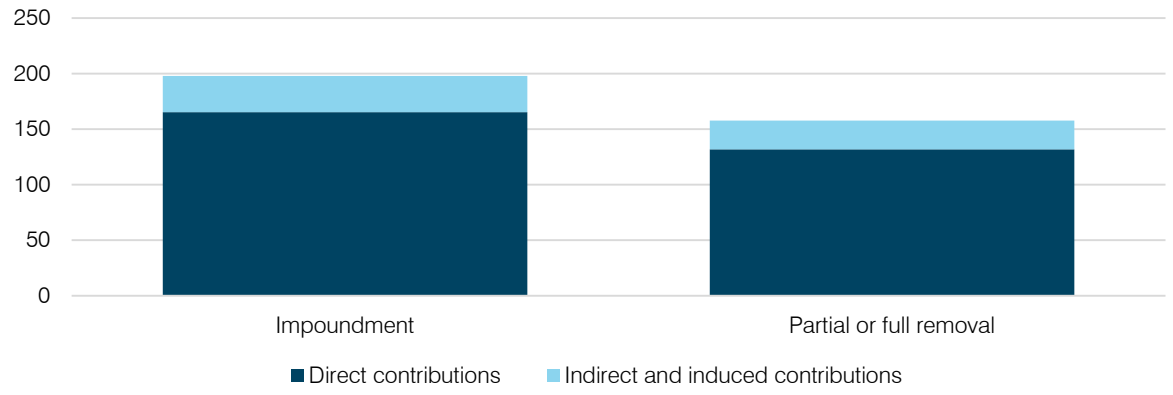
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Cooke Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts

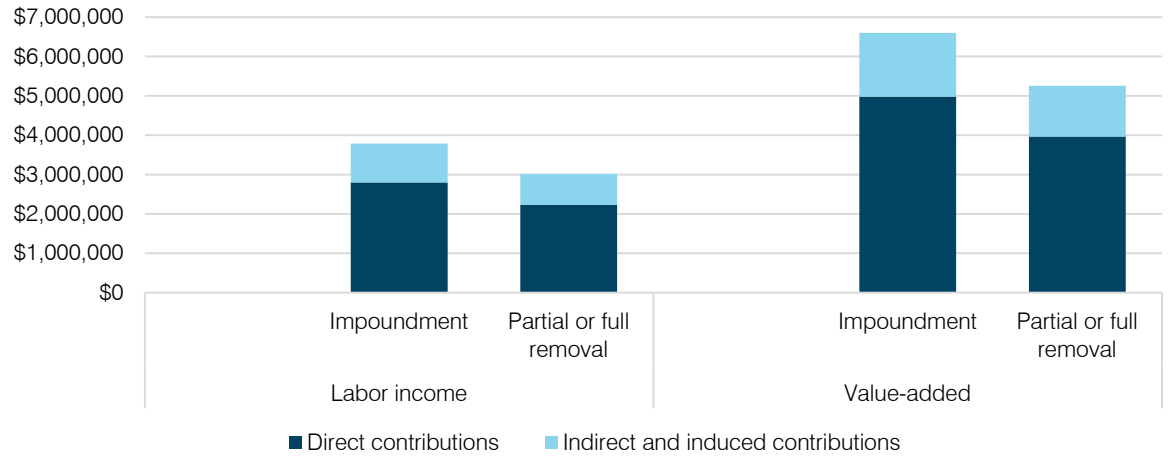
during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 40 fewer jobs in the region and a $1.3 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

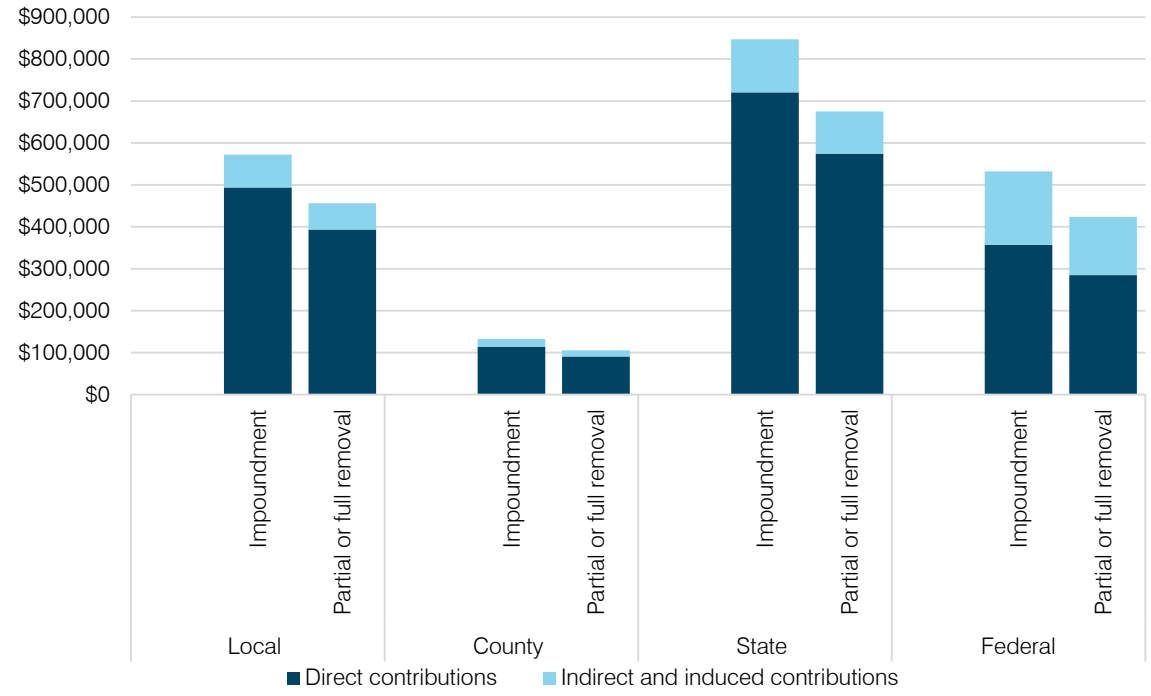
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $423,383 fewer contributions in total annual tax revenue, with $315,283 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Cooke Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Cooke Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Cooke Dam, which includes:

- A reduction of $1.3 million in gross regional product and 40 jobs
- A reduction of $423,383 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Croton Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 4
BACKGROUND 7
Approach 7
Methodology 8
CROTON DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

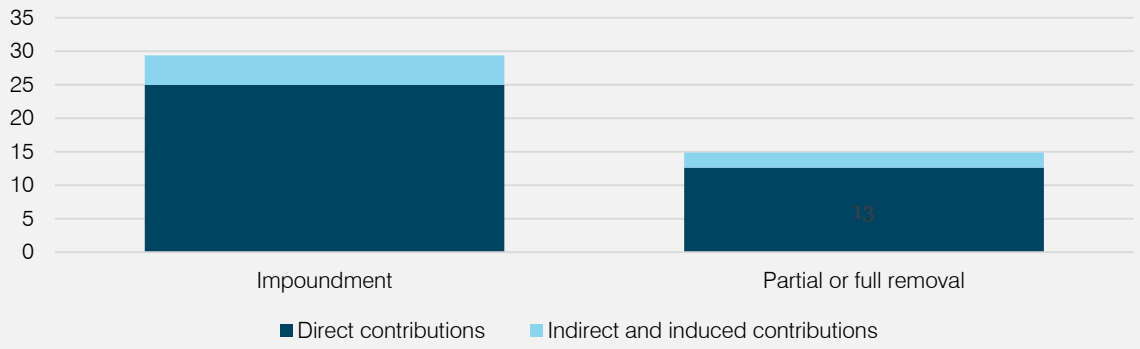
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

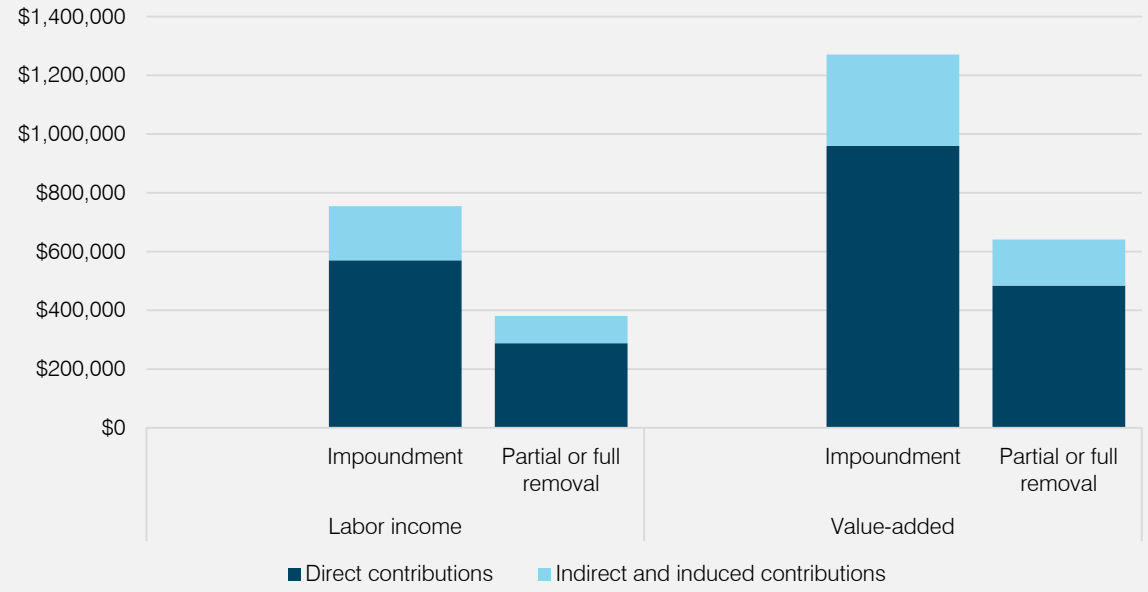
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. After reviewing maps of the area, PSC conducted a single recreational analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Croton Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 15 fewer jobs in the region and a $629,499 reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

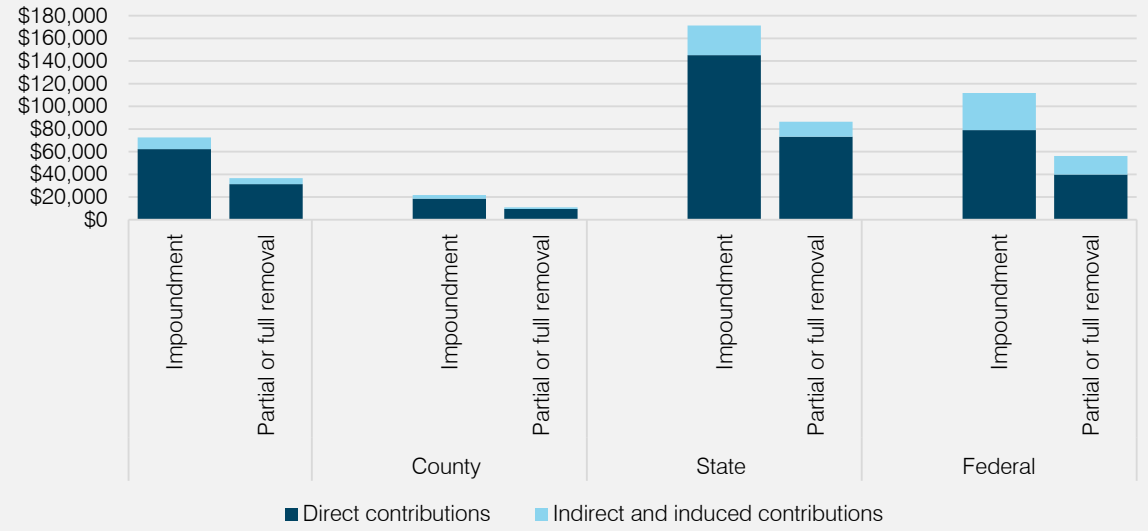
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $187,095 fewer contributions in total annual tax revenue, with $131,573 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Partial Full Removal
Number of Properties Analyzed	612
Expected Net Property Value Impacts	
Assessed value	-$12,670,480
Market value[1]	-$25,340,960
Expected Net Property Tax Revenue Impacts[2]	
Taxable value	-$10,256,156
Tax revenues	-$372,837
Average millage	36.352

Sources: Newaygo County Equalization Department, PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Croton Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Croton Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Croton Dam is the southernmost of the three Consumers Energy hydroelectric dams on the Muskegon River. It is about six miles southeast of Hardy Dam, in Croton Township, Newaygo County. The township has a population of approximately 3,200 individuals. Like Rogers and Hardy Dams, Croton Dam is an earthen embankment dam. It was completed in 1907, and two additional generating units were constructed in 1915. At 700 feet long, Croton Dam is the smallest in length of Consumers' 13 hydroelectric dams. It is about 45.5 feet high, and the resulting impoundment, Croton Dam Pond, is approximately 1,209 acres in area.

Environmental Context

While no decision has been made on the Croton Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Over time, wetlands will begin to take hold, forming where the hydrologic conditions persist for their creation. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal.

The historic survey maps of the Croton Dam impoundment do not indicate swamps or marsh land. The land was identified as "cultivated" and "timbers," which we interpreted as uplands. After reviewing the historical assessment, we would expect the majority of the former bottomlands to form as upland areas. A partial dam removal scenario would likely have similar delineations, with the exception of the immediate floodplain areas bounding the restored channel or small impoundment. Per the MNFI wetland map viewer, there are wetlands present on the fringes of the eastern lobe of the current impoundment. This area of the historic survey also noted "flowage" as the primary land description, which indicates that this area may experience some wetland formation.

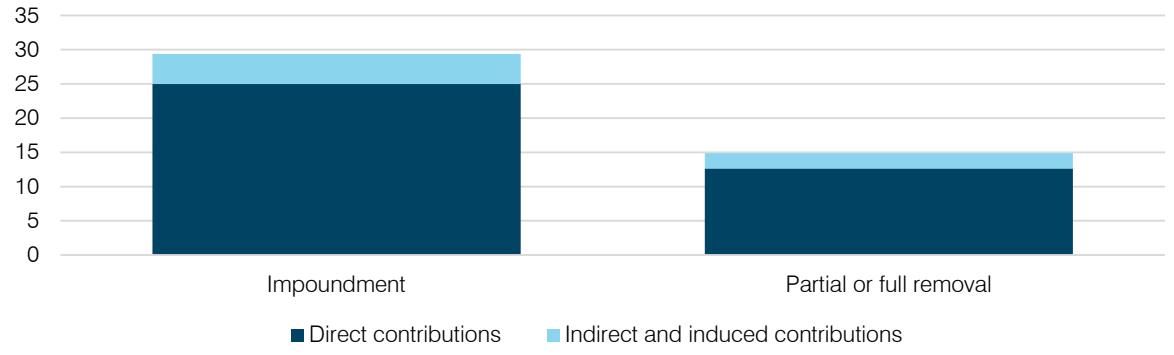
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

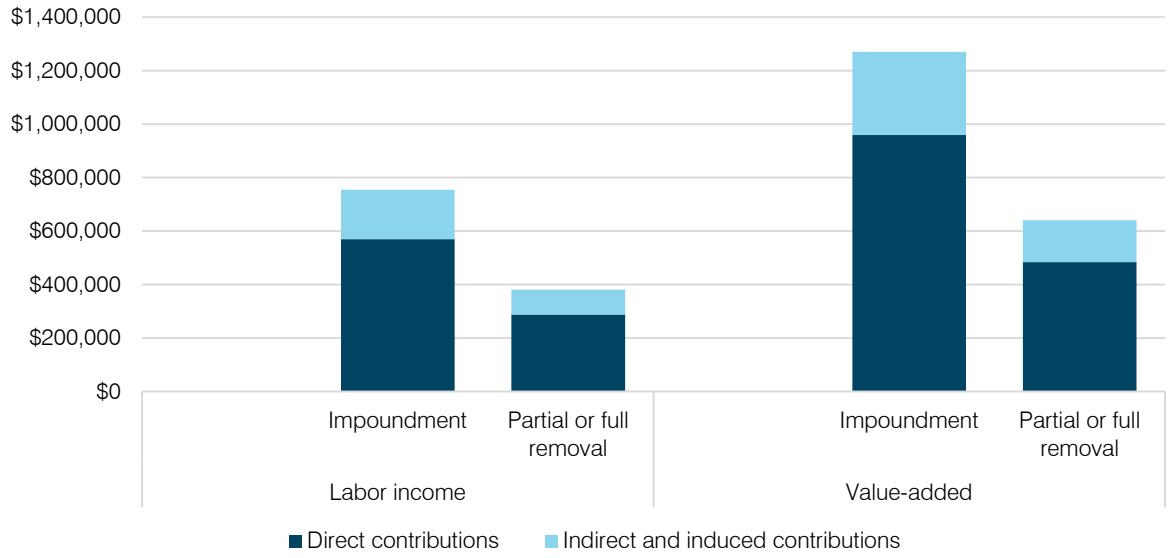
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single recreational analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Croton Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 15 fewer jobs in the region and a $629,499 reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

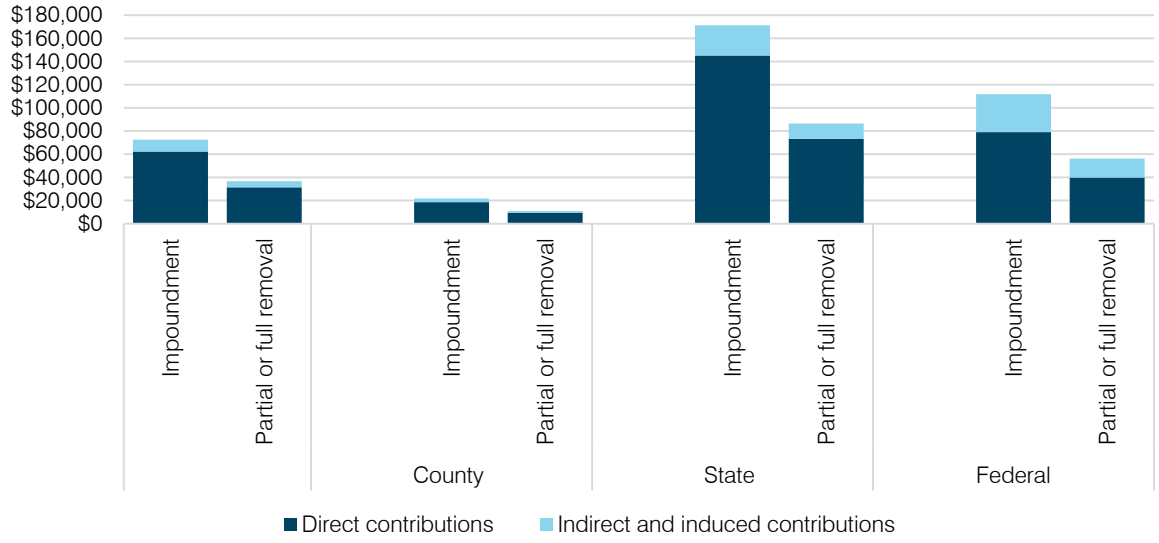
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $187,095 fewer contributions in total annual tax revenue, with $131,573 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Croton Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

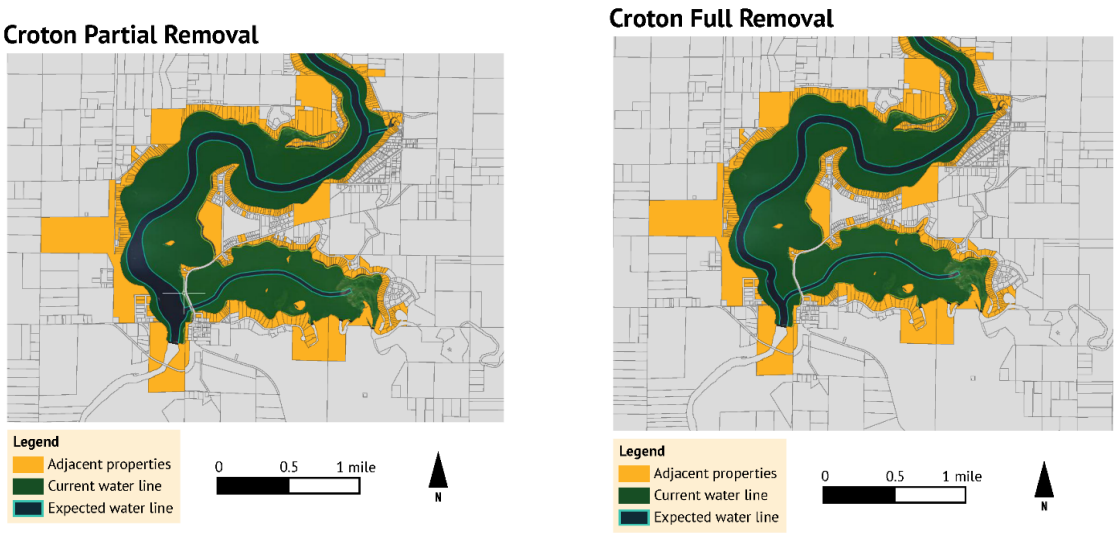
Property Value Analysis

Residential lots adjacent to the existing impoundment include 612 properties around Croton Pond. To what extent residential property values would be affected by a partial or full dam removal depends on a property's proximity to the resulting water's edge. This is because relative to a full dam removal, a partial removal retains a small impoundment that extends the water's edge to more properties. Exhibit 8 shows two maps of property plats around Croton Pond, one depicting the extent of the expected water line under a partial dam removal and one showing the same under a full dam removal. The expected extant of the water body after dam modification is shown by the green and blue insert. All other points along the river system are assumed to be invariant between the two scenarios and from the current relationship with the water system.

PSC determined the potential net change in property values and associated annual property tax impact, highlighted in Exhibit 9. Accordingly, the relatively small impoundment expected with a partial dam removal will provide waterfront access to more properties than under a full removal. Because more lots will have greater water proximity than with full removal, the partial-removal scenario would be expected to have a lesser overall negative effect on overall residential property values and annual residential property tax revenues. However, because there are few residential properties immediately adjacent to the Croton Dam, this assessment anticipates that the partial and full dam removal scenarios will have comparable effects. As Exhibit 9 indicates, 612 impoundment-adjacent properties will experience a

cumulative reduction in market values of around $25.3 million under each removal scenario. Similarly, annual residential property tax revenues are expected to decrease by about $372,345 or $372,837 under the partial and full removal scenarios, respectively.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Partial or Full Removal
Number of Properties Analyzed	612
Expected Net Property Value Impacts	
Assessed value	-$12,670,480
Market value[3]	-$25,340,960
Expected Net Property Tax Revenue Impacts[4]	
Taxable value	-$10,256,156
Tax revenues	-$372,837
Average millage	36.352

Sources: Newaygo County Equalization Department, PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Croton Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Croton Dam, which includes:

- A reduction of $629,499 in gross regional product and 15 jobs
- A reduction of $187,095 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial or full removal of the dam will also impact adjacent property values, including:

- A reduction of $25.3 million in market value to adjacent properties
- A reduction of about $372,837 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Five Channels Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
FIVE CHANNELS DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 16
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

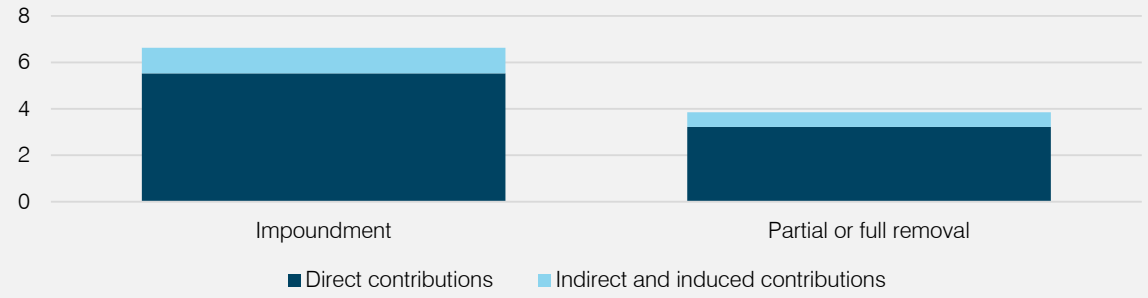
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

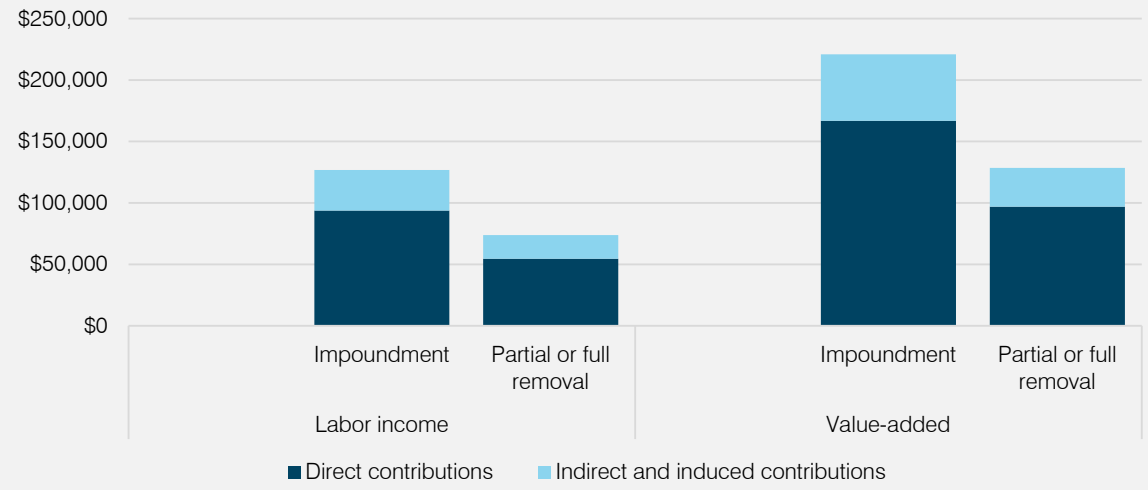
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Five Channels Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 3 fewer jobs in the region and a $92,476 reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

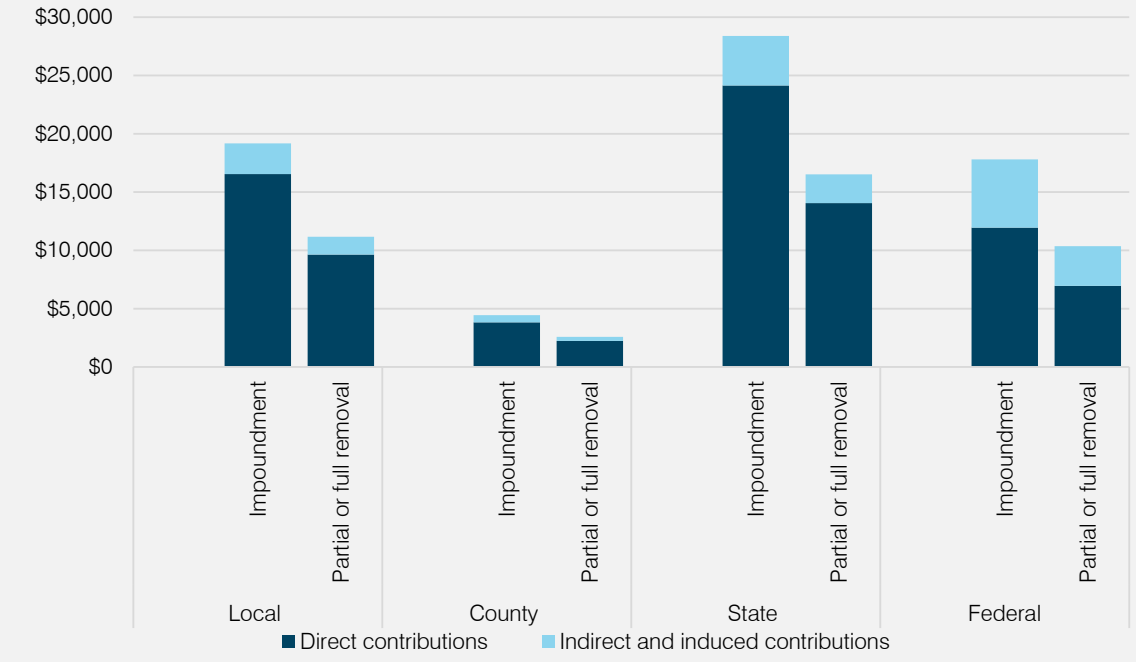
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $29,183 fewer contributions in total annual tax revenue, with $21,732 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other studies of Consumers dams, PSC conducted a property analysis to estimate the impact of partial and/or full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Five Channels Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

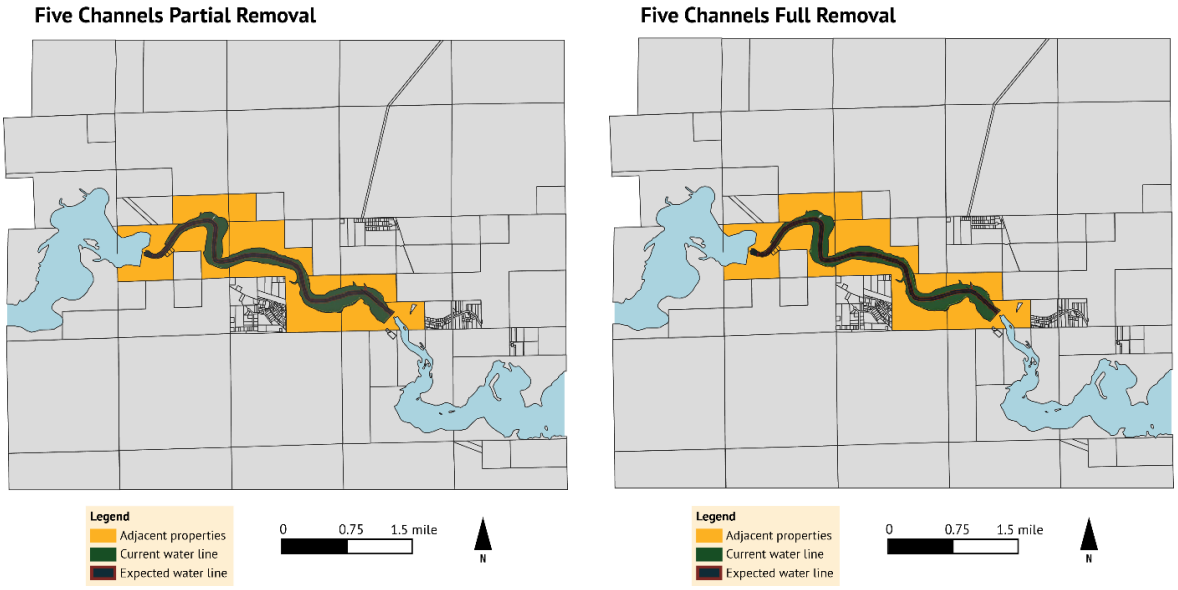
The Five Channels Dam is the smallest of the six Consumers hydroelectric dams on the Au Sable River. Located in Oscoda Township, the Five Channels Dam measures about 40 feet in height and about 800 feet in length. Five Channels Pond is also the smallest of the Consumers impoundments and like the other Au Sable dams, Five Channels is surrounded by Huron National Forest.

Environmental Context

While no decision has been made on the Five Channels Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



The historic survey and MNFI wetland map viewer for the Five Channels Dam indicate wetlands along the northern portion of the impoundment. It is likely a large majority of the bottomlands between the river and the northern impoundment water's edge would have a higher probability of forming wetlands. Additionally, there are wetland indicators along the southern edge of the impoundment, near the dam, so it is likely the bottomlands within that portion of the impoundment would have a higher chance of wetland formation as well. It is unclear to what extent wetlands or uplands would form elsewhere, however there is a higher likelihood of wetland formation in areas that are in proximity to other adjacent wetlands.

Economic Impact Analysis

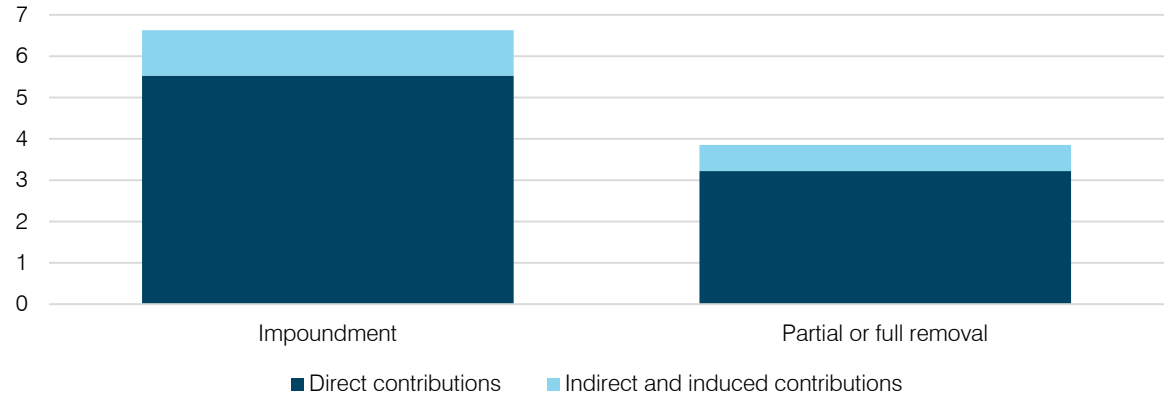
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC

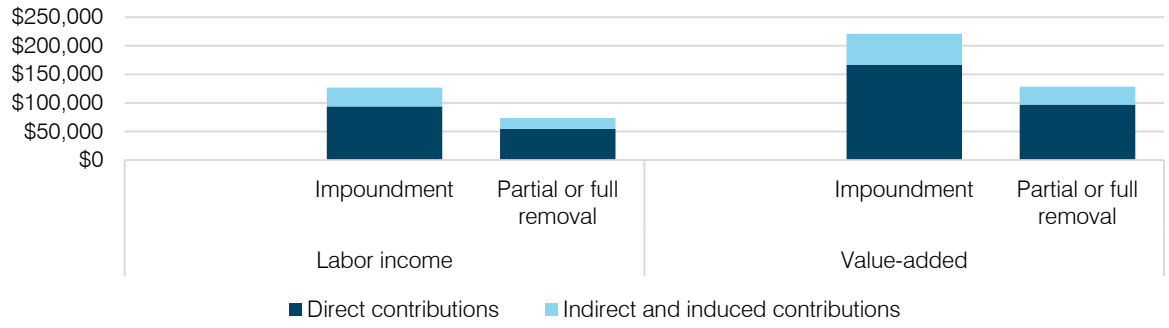
conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Five Channels Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 3 fewer jobs in the region and a $92,476 reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

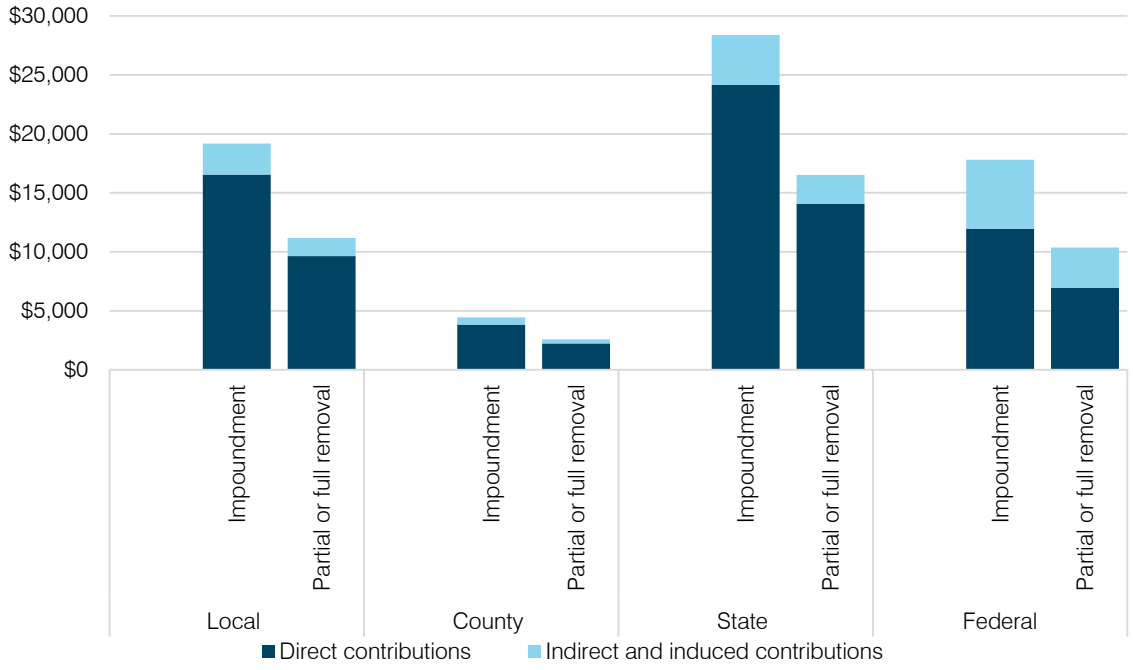
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $29,183 fewer contributions in total annual tax revenue, with $21,732 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Five Channels Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Five Channels Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Five Channels Dam, which includes:

- A reduction of $92,4761 in gross regional product and 3 jobs
- A reduction of $29,183 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Foote Dam Economic Impact Study

PSC



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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
FOOTE DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 16
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

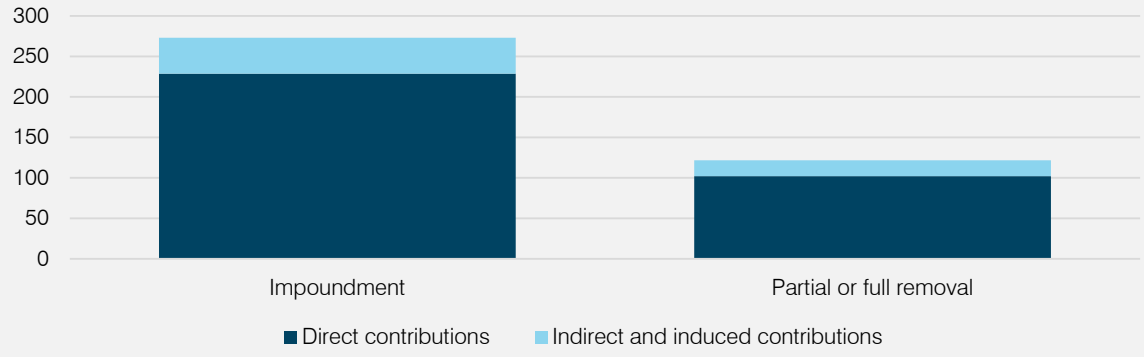
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

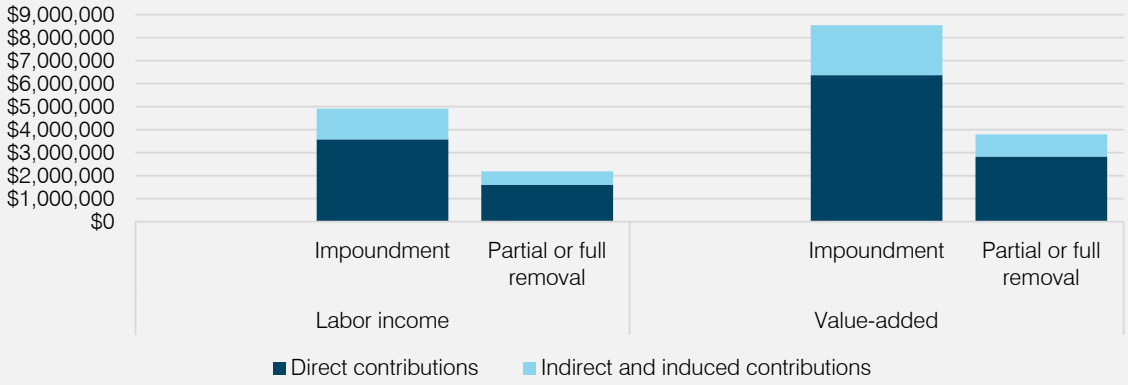
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Foote Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 151 fewer jobs in the region and a $4.7 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

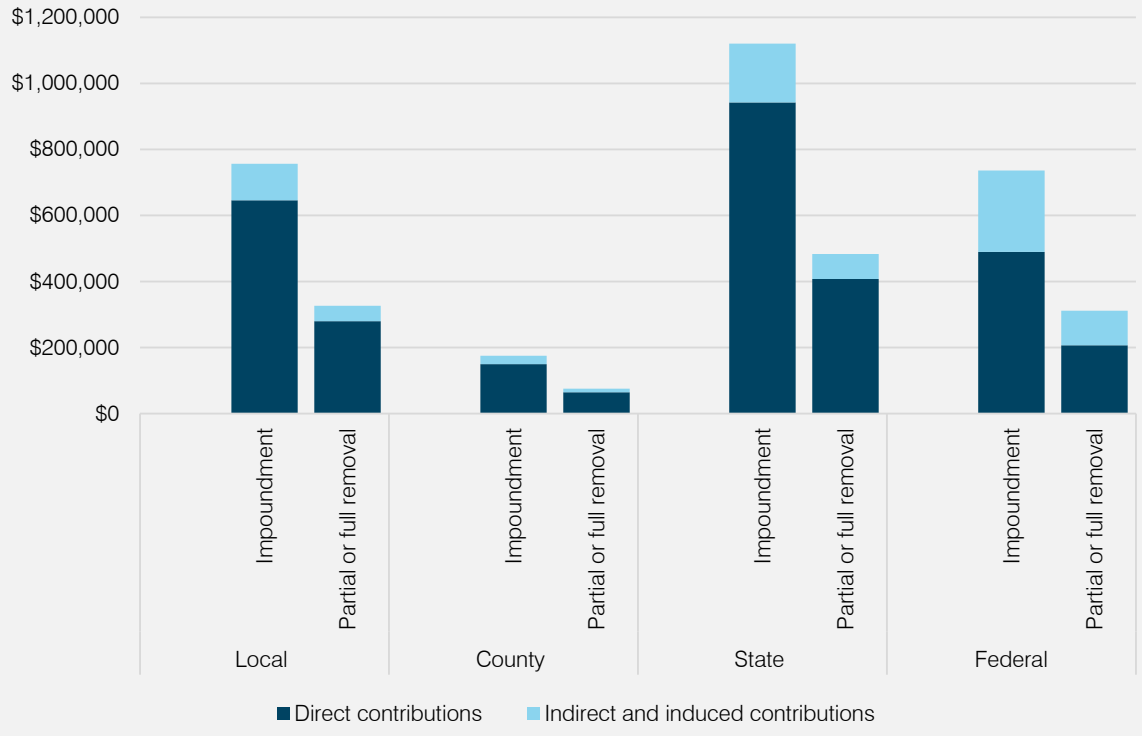
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $1.6 million fewer contributions in total annual tax revenue, with $1.2 million of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other studies of Consumers dams, PSC conducted a property analysis to estimate the impact of partial and/or full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Foote Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

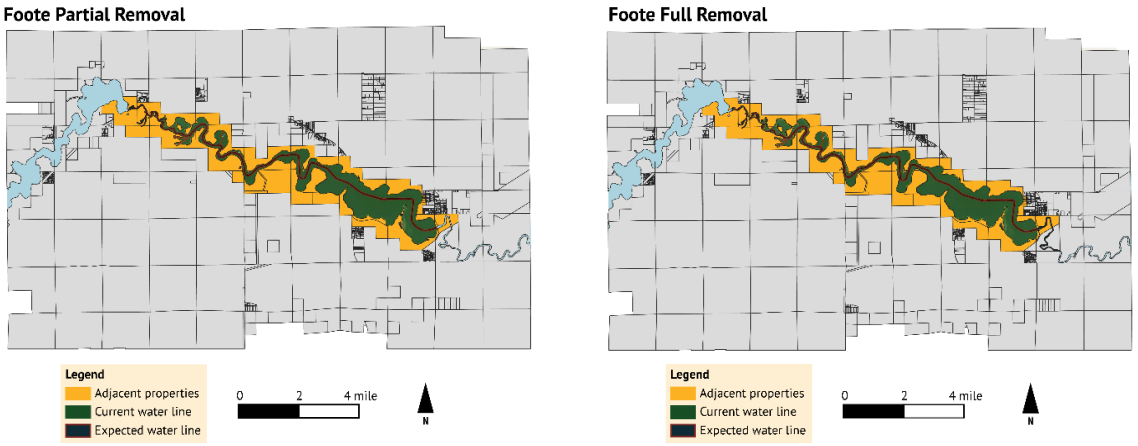
Foote Dam is the easternmost of Consumers Energy's 13 hydroelectric dams. It is located in Oscoda Township, Iosco County, about seven miles west of Lake Huron and the unincorporated community of Oscoda. Foote Dam was completed in 1918. It is about 47 feet in height and about 4,100 feet in length. Huron National Forest is to the south and west of the impoundment, Foote Pond, which also offers recreational opportunities.

Environmental Context

While no decision has been made on the Foote Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



The historic Foote Dam survey map indicated significant swamps and marshes within the existing impounded area, indicating the bottomlands have a propensity to form wetlands. However, the amount of sediment accumulation may impact wetland formation and thus the higher-elevation bottomlands would be expected to form as uplands once dewatered. Additionally, there are minimal wetlands adjacent to the impoundment, and it is less likely that wetlands would form on impounded sediments. If wetlands were to form, the most likely location is in the upper impoundment area where the impoundment narrows and there are wetlands closer to the impoundment. There is a high bluff on the north side of the impoundment, so wetlands are unlikely to form there. Wetlands may form along the adjacent wetland complexes or tributaries.

Economic Impact Analysis

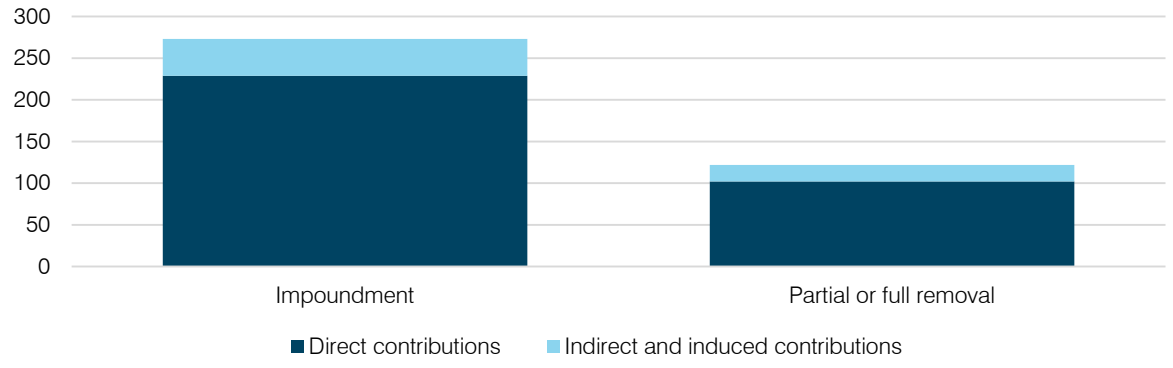
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state

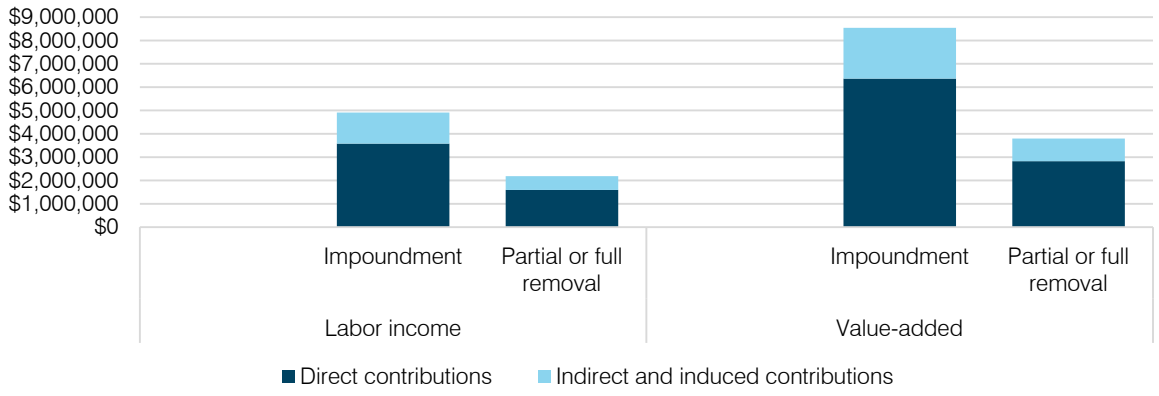
sources, this analysis estimates the short-term economic impact of the full removal of the Foote Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 151 fewer jobs in the region and a $4.7 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

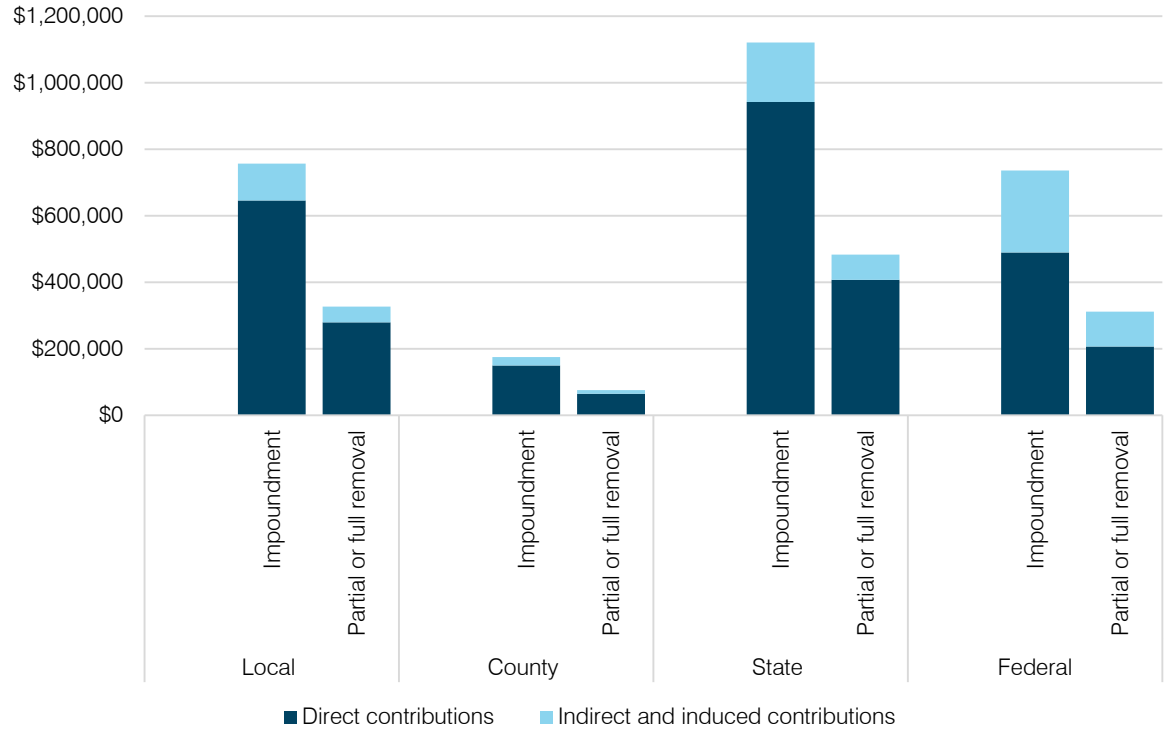
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $1.6 million fewer contributions in total annual tax revenue, with $1.2 million of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Foote Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Foote Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Foote Dam, which includes:

- A reduction of $4.7 million in gross regional product and 151 jobs
- A reduction of $1.6 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Hardy Dam Economic Impact Study

PSC



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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
HARDY DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

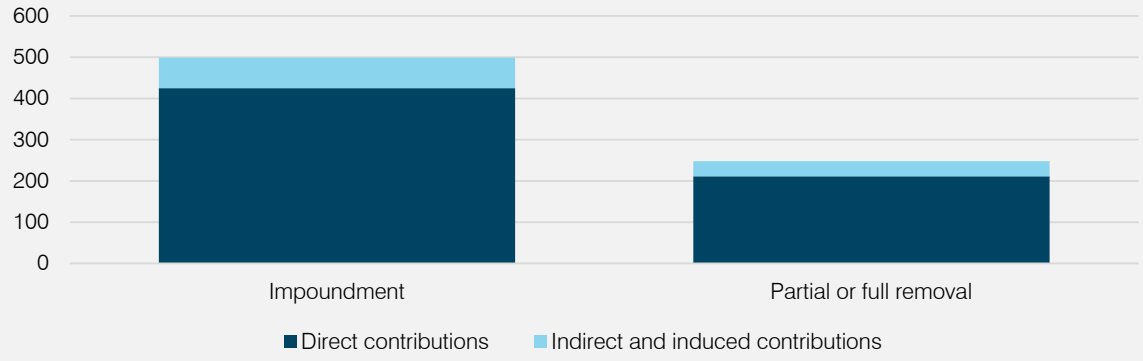
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

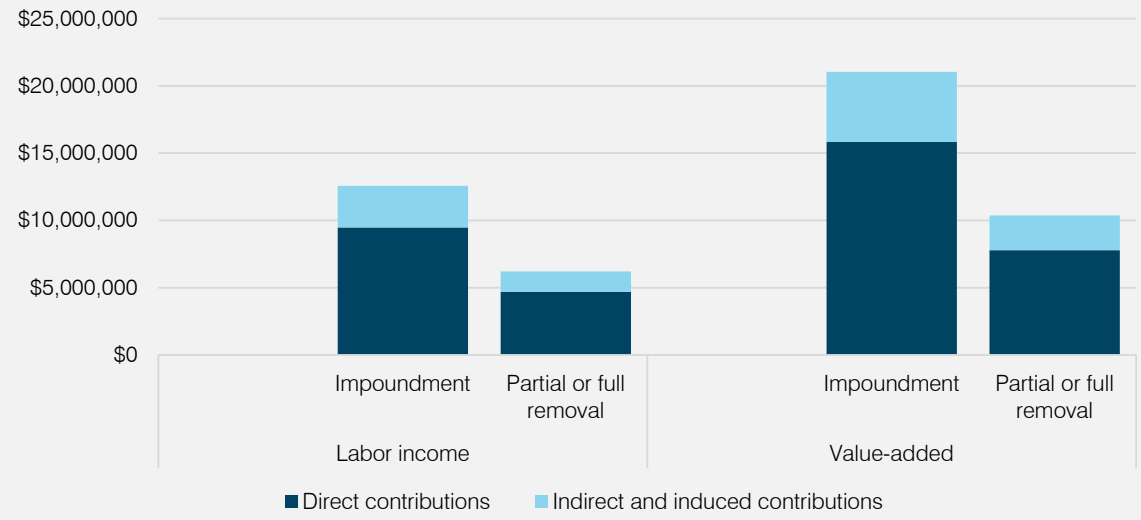
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Hardy Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 251 fewer jobs in the region and a $10.7 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

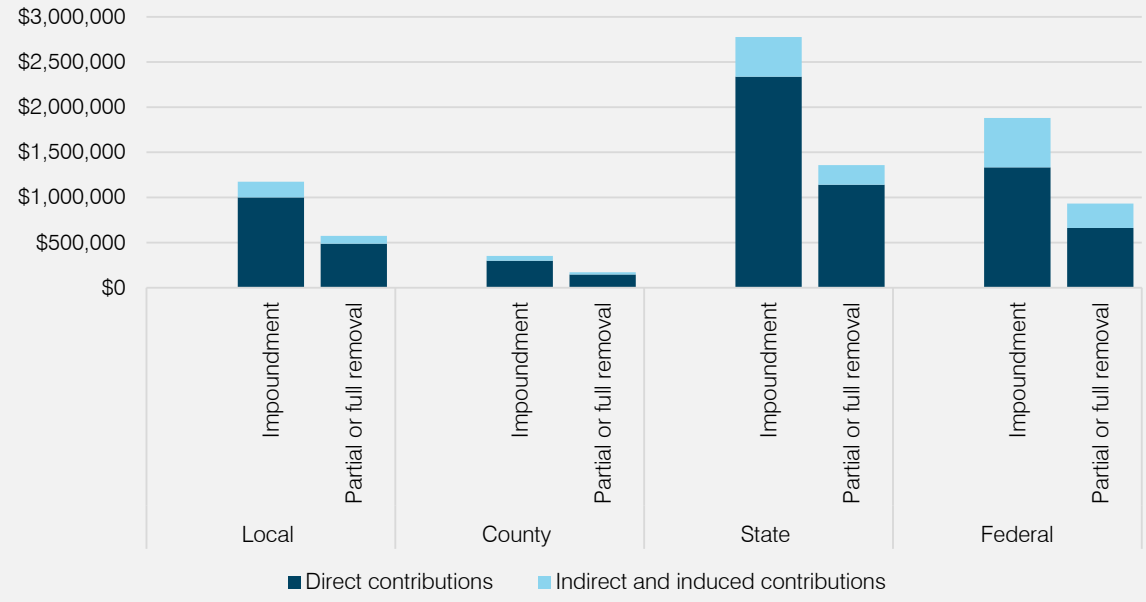
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $3.1 million fewer contributions in total annual tax revenue, with $2.2 million of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Removal
Number of Properties Analyzed	21
Expected Net Property Value Impacts	
Assessed value	-$118,751
Market value[1]	-$237,503
Expected Net Property Tax Revenue Impacts[2]	
Taxable value	-$76,506
Tax revenues	-$2,740
Average millage	35.813

Sources: Newaygo County Equalization Department, Mecosta County Equalization Department, PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Hardy Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Hardy Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Hardy Dam is the tallest and largest generating unit of Consumers' 13 hydroelectric dams and was among the last to be built. Construction was completed in 1931. Hardy Dam is the largest earthen dam in North America east of the Mississippi River. The dam is 100 feet in height and 2,580 feet in length. Located in Big Prairie Township, Newaygo County, Hardy Dam is northwest of Croton Dam and southeast of Rogers Dam on the Muskegon River. Nearby communities include White Cloud in Newaygo County to the west and Stanwood and Morley in Mecosta County to the east. Big Prairie Township's population is approximately 2,600 individuals. The dam creates the 3,900 acre impoundment known as Hardy Dam Pond, which is more than twice the size of the next-largest impoundment at a Consumers dam.

Environmental Context

While no decision has been made on the Hardy Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Over time, wetlands will begin to take hold, forming where the hydrologic conditions persist for their creation. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal.

The historic survey maps for the Hardy Dam Pond are limited but indicate that larger areas of uplands are likely to form in the lower impoundment (near the current dam). There is propensity for wetland formation between the river bends in the lower impoundment unless specifically separated with impounded sediment fill. Based on the Michigan Natural Features Inventory (MNFI) wetland viewer, the upper impoundment would also likely have significant wetland formation where prolific wetland complexes have been identified. Given the impoundment's size, upland areas would be expected to form in the wider impoundment areas with selective wetland formation near tributaries, inside channel bends, and lower elevations within the restored topography.

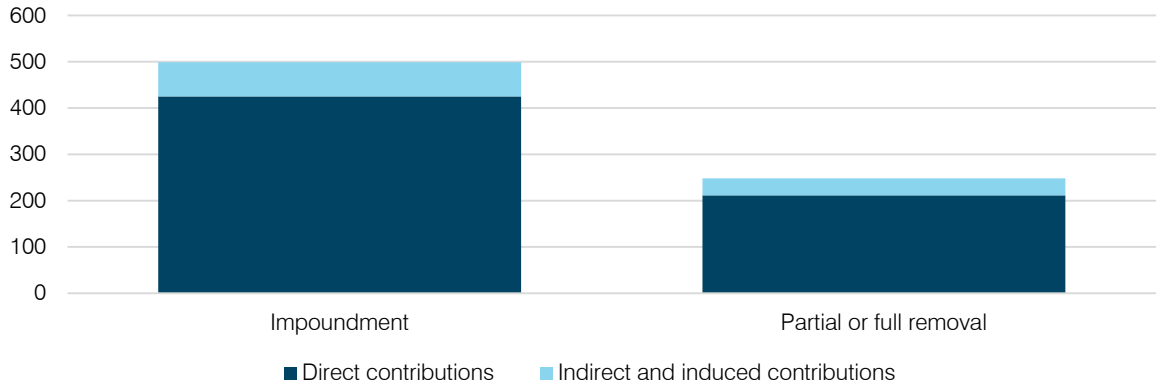
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

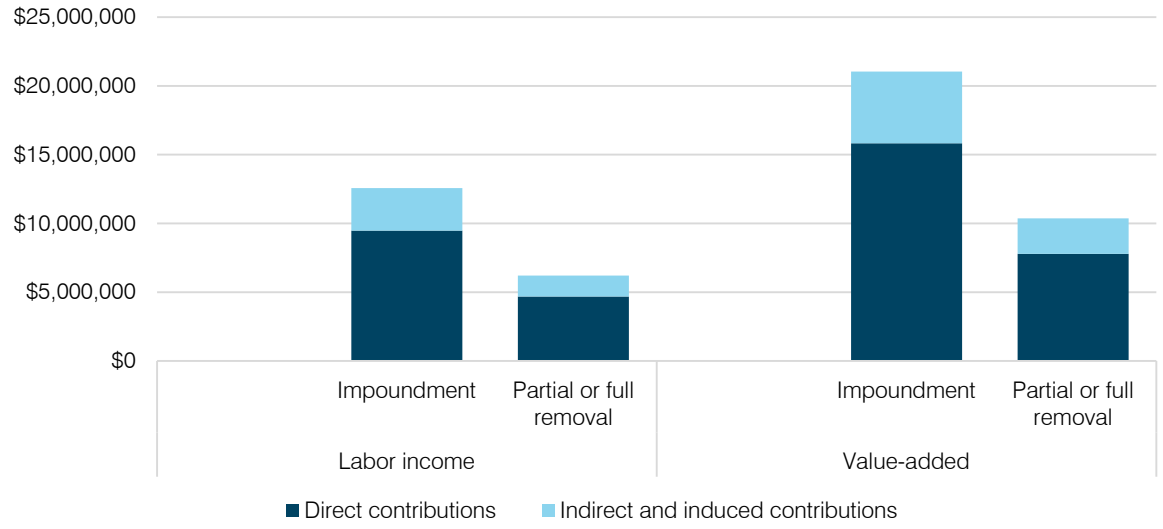
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Hardy Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 251 fewer jobs in the region and a $10.7 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Full or Partial Removal



Source: PSC analysis

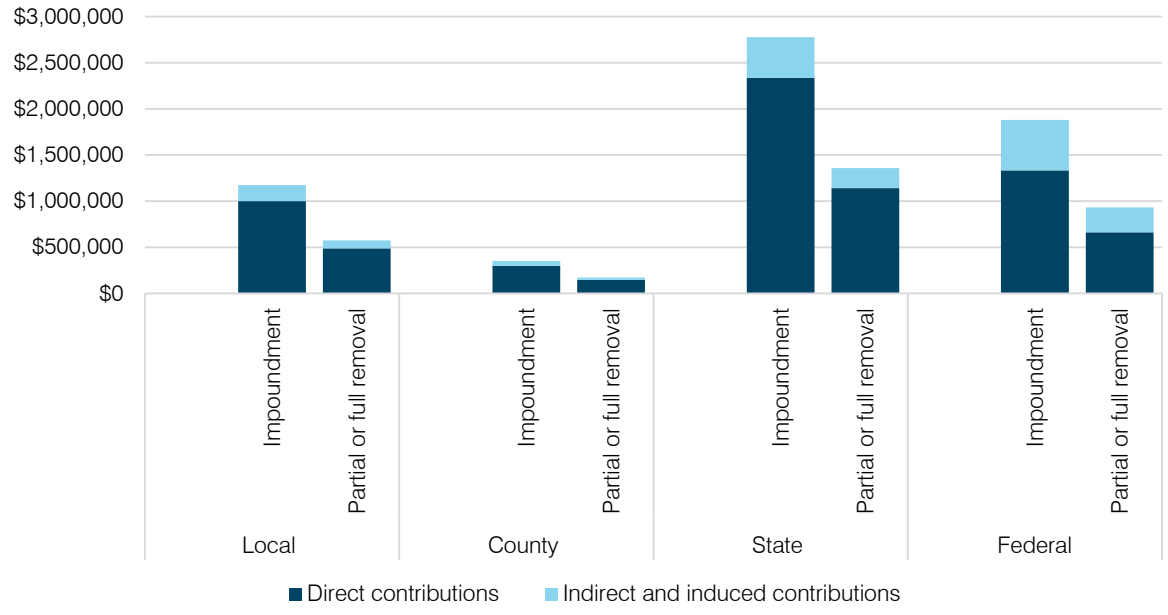
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Full or Partial Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $3.1 million fewer contributions in total annual tax revenue, with $2.2 million of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Full or Partial Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Hardy Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

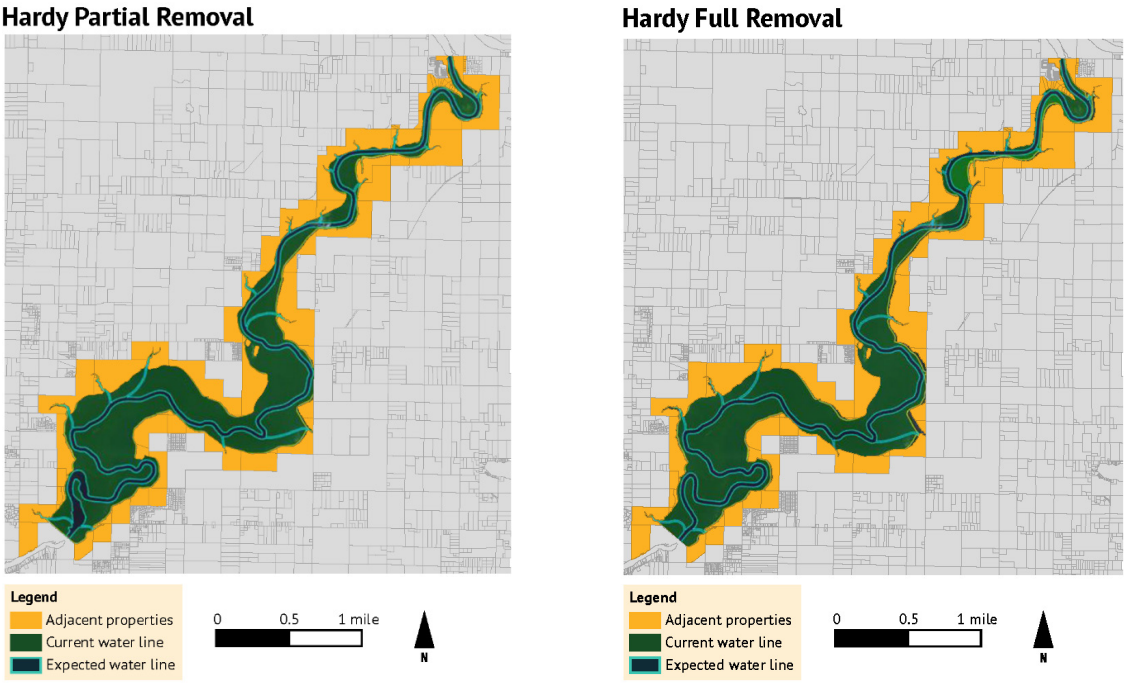
Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

Residential lots adjacent to the existing Hardy Dam Pond are limited to about 21 properties well away from the actual dam. Accordingly, the net amenity effect on these households is much less than if the properties were near the dam along the widest and deepest components of the impoundment. Exhibit 8 shows two maps of property plats around Hardy Dam Pond, one depicting the extent of the expected water line under a partial dam removal and one showing the same under a full dam removal. As the expected extent of the water under the two dam removal scenarios are equal, the expected effect on property values should be equal between the two outcomes.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Removal
Number of Properties Analyzed	21
Expected Net Property Value Impacts	
Assessed value	-$118,751
Market value[3]	-$237,503
Expected Net Property Tax Revenue Impacts[4]	
Taxable value	-$76,506
Tax revenues	-$2,740
Average millage	35.813

Sources: Newaygo County Equalization Department, Mecosta County Equalization Department, PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Hardy Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Hardy Dam, which includes:

- A reduction of $10.7 million in gross regional product and 251 jobs
- A reduction of $3.1 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial or full removal of the dam will also impact adjacent property values, including:

- A reduction of $237,503 in market value to adjacent properties
- A reduction in $2,740 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Hodenpyl Dam Economic Impact Study

PSC



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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
HODENPYL DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Analysis 16
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

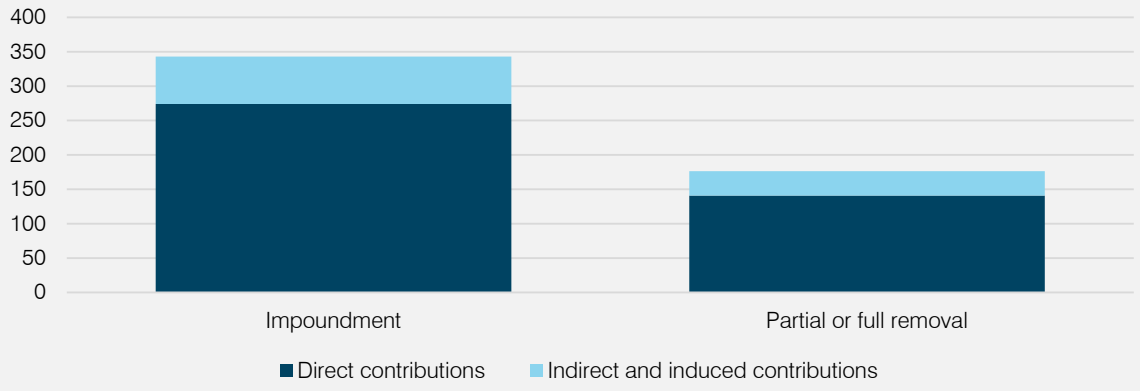
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

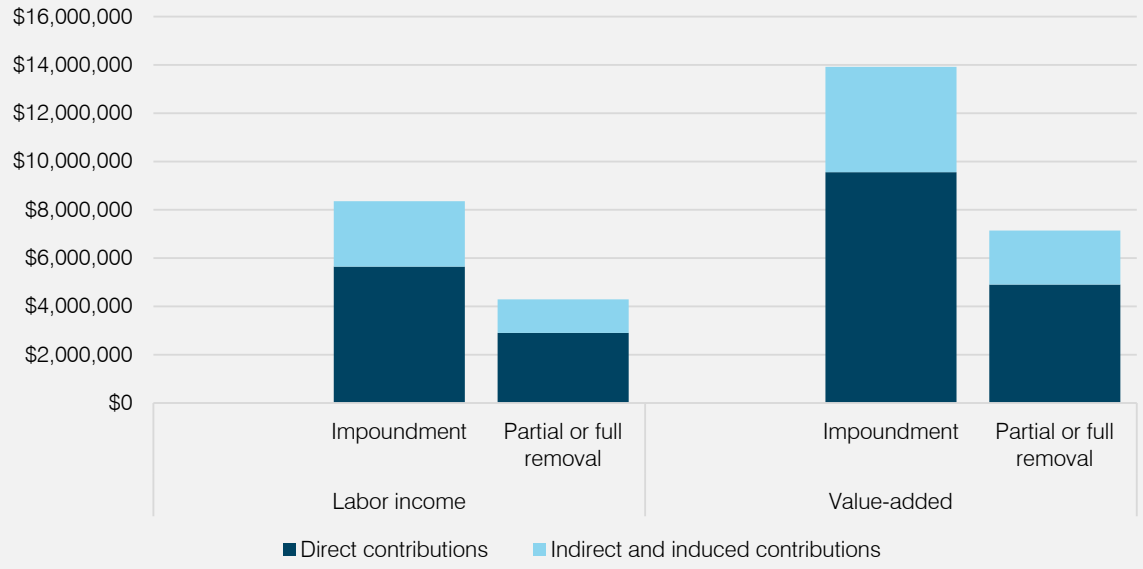
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Hodenpyl Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 167 fewer jobs in the region and a $6.8 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

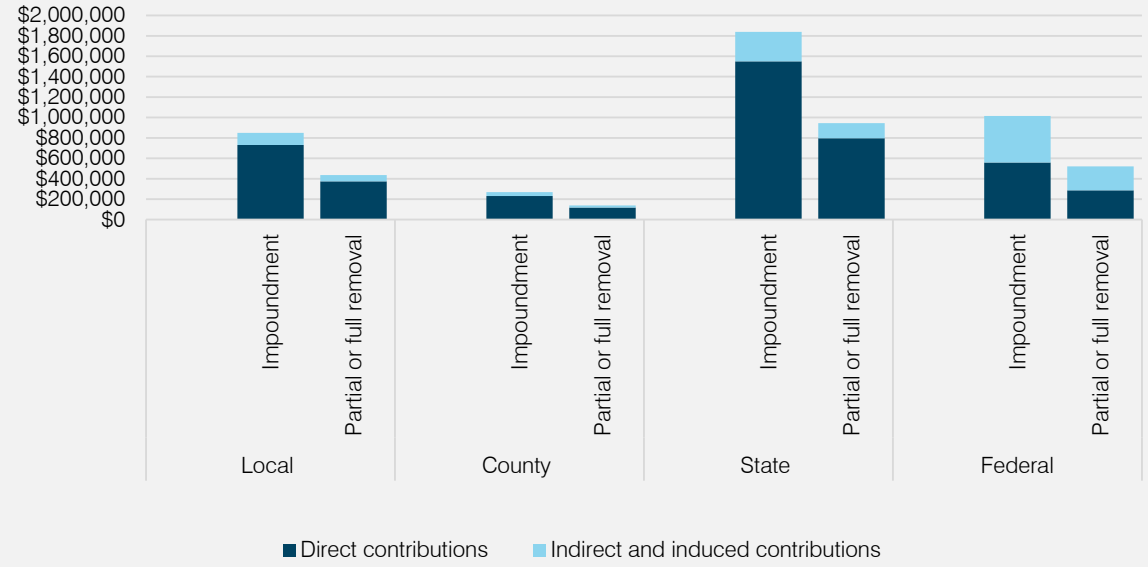
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $1.9 million fewer contributions in total annual tax revenue, with $1.4 million of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Wexford County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on impoundment-adjacent properties. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Hodenpyl Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

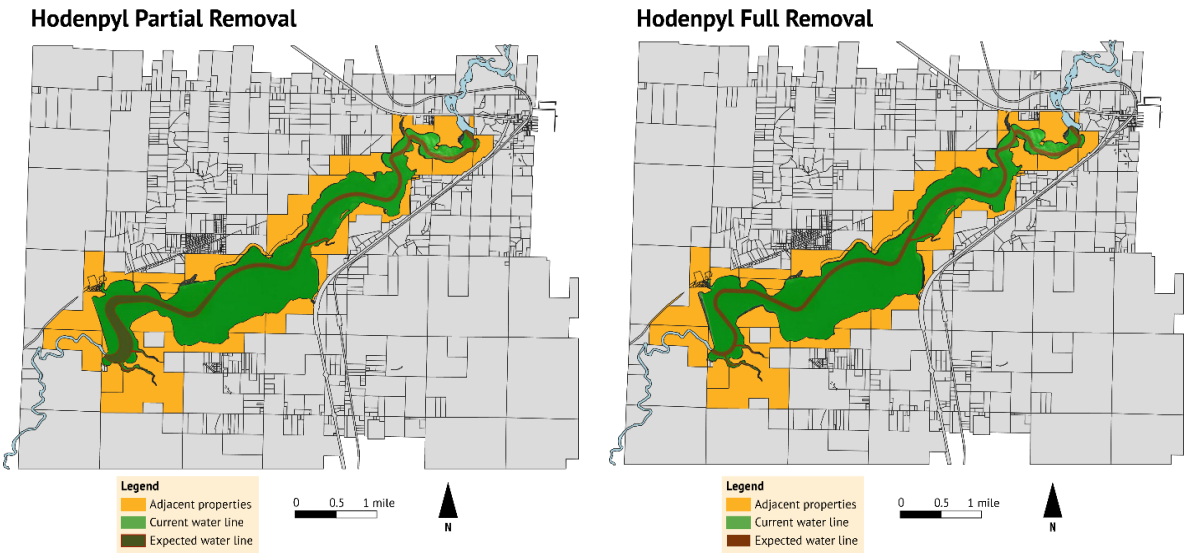
Completed in 1925, Hodenpyl Dam is one of two dams on the Manistee River. Located just east of the Manistee-Wexford County line, the Hodenpyl Dam is situated at the edge of the Manistee National Forest in Springville Township, which has a population of about 1,800. The dam creates an impoundment, Hodenpyl Dam Pond, that covers about 1,798 acres. The dam has the third largest generating capacity of Consumers' 13 hydroelectric dams.

Environmental Context

While no decision has been made on the Hodenpyl Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



Historic Hodenpyl Dam survey maps show a few wetland indicators within the impoundment outside of the immediate floodplain areas, which suggests that upland habitat formation in this impoundment is likely. A partial dam removal might produce conditions where wetland habitat types could form around the boundaries of the reduced impoundment area, particularly along the inside of restored river channel bends and where tributaries enter the impoundment. Additionally, if there are any lower areas in the post dam removal topography, those areas may also experience wetland formation. Generally, it is expected a large majority of the current impounded area could convert to upland habitat.

Economic Impact Analysis

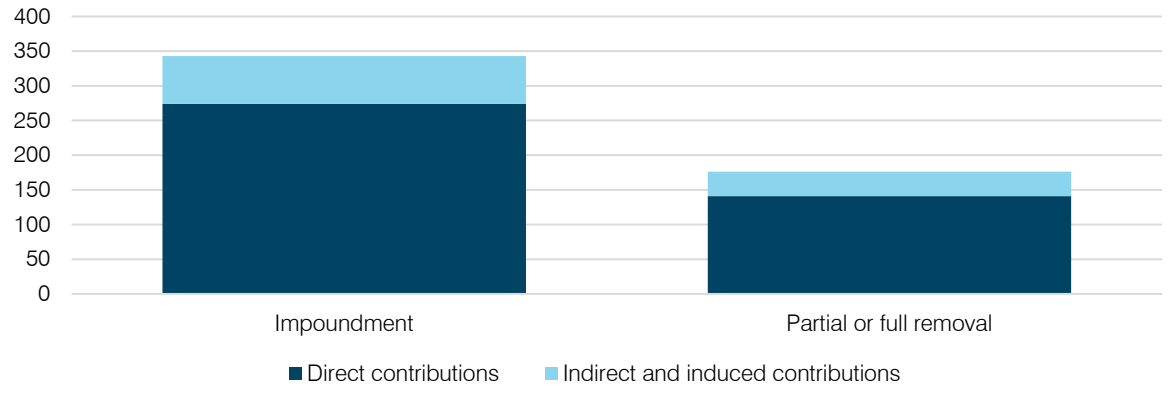
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state

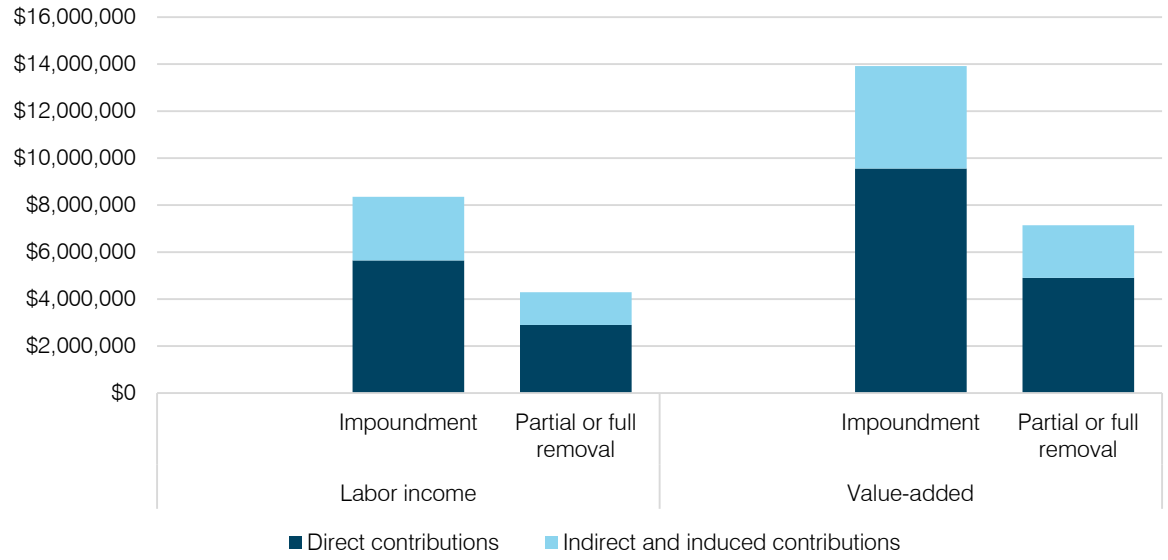
sources, this analysis estimates the short-term economic impact of the full removal of the Hodenpyl Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 167 fewer jobs in the region and a $6.8 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

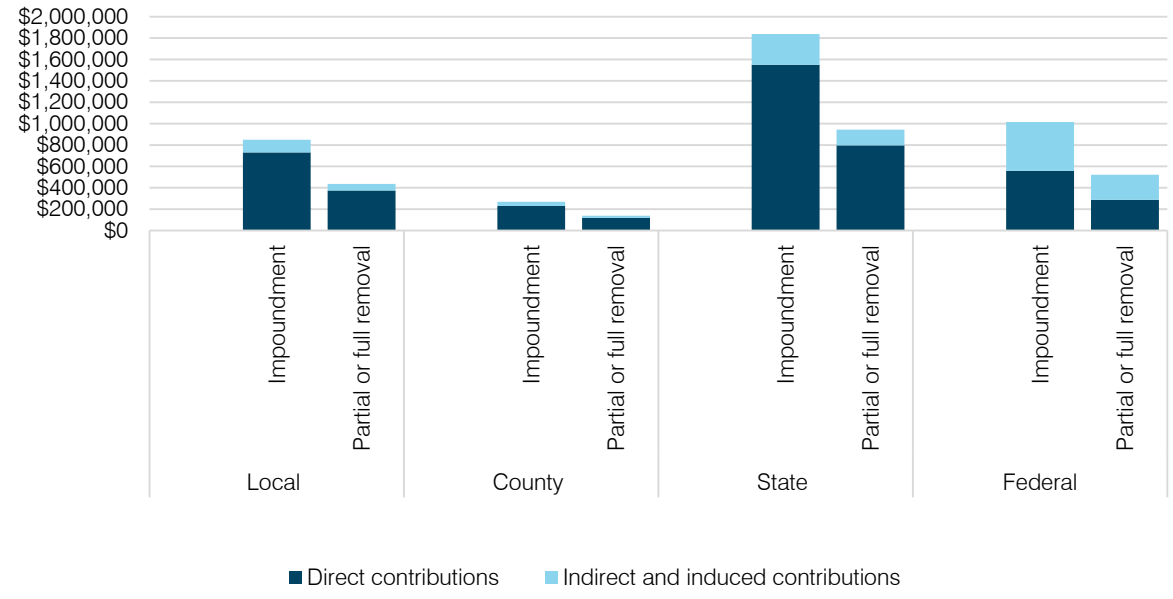
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $1.9 million fewer contributions in total annual tax revenue, with $1.4 million of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Hodenpyl Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Analysis

PSC compiled assessed and taxable values from the Wexford County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on impoundment-adjacent properties. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Hodenpyl Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Hodenpyl Dam, which includes:

- A reduction of $6.8 million in gross regional product and 167 jobs
- A reduction of $1.9 million in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Loud Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUNDC 7
Approach 7
Methodology 8
LOUD DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

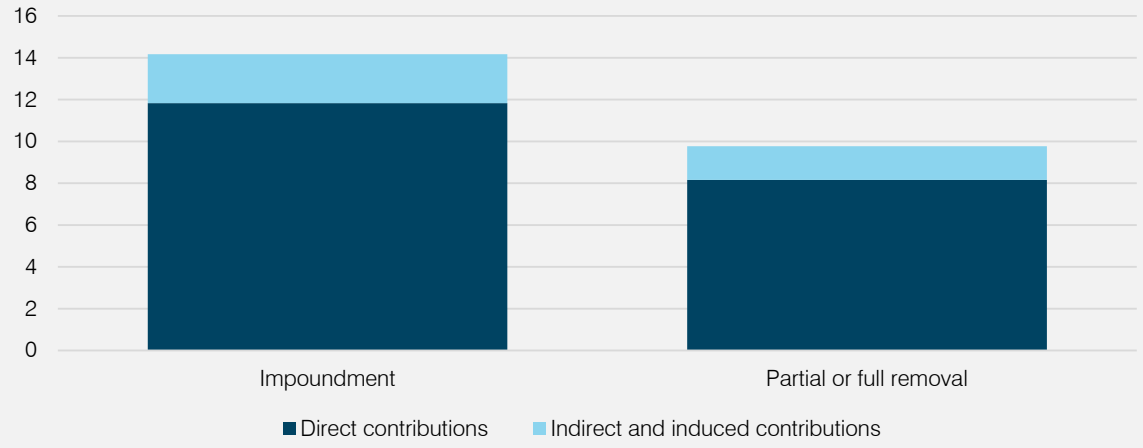
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

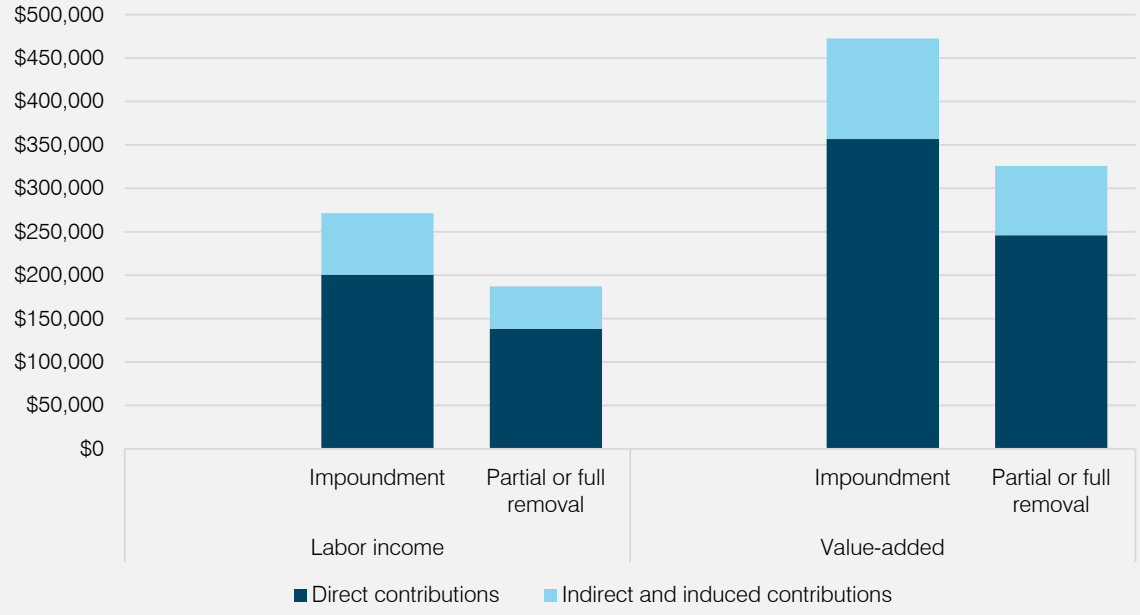
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Loud Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 4 fewer jobs in the region and a $146,927 reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

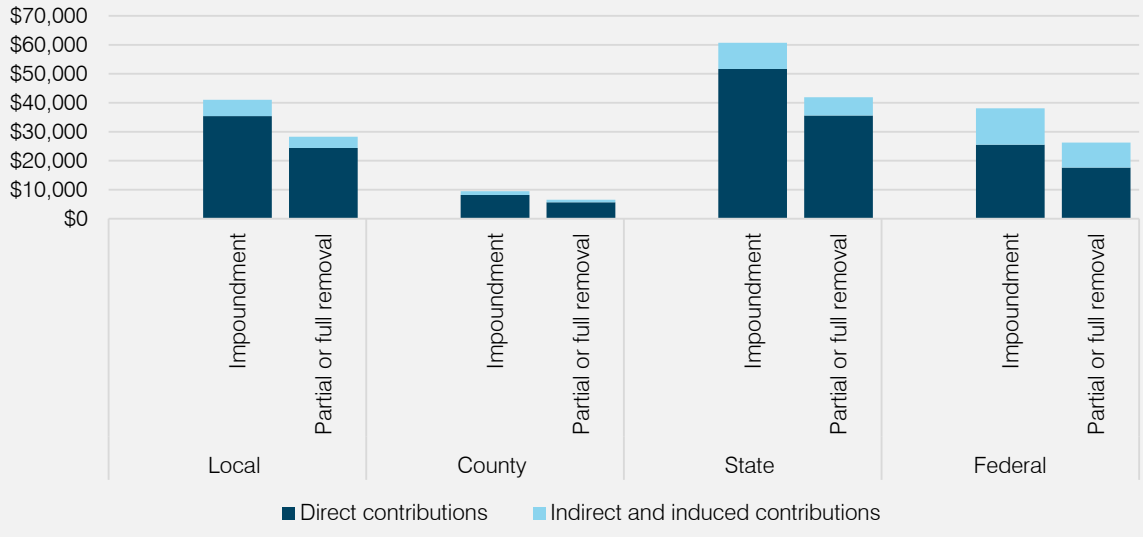
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $46,341 fewer contributions in total annual tax revenue, with $34,509 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Iosco County Equalization Department for the tax (calendar) year 2022. In other studies of Consumers dams, PSC conducted a property analysis to estimate the impact of partial and/or full dam removal on properties adjacent to the pond. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Loud Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

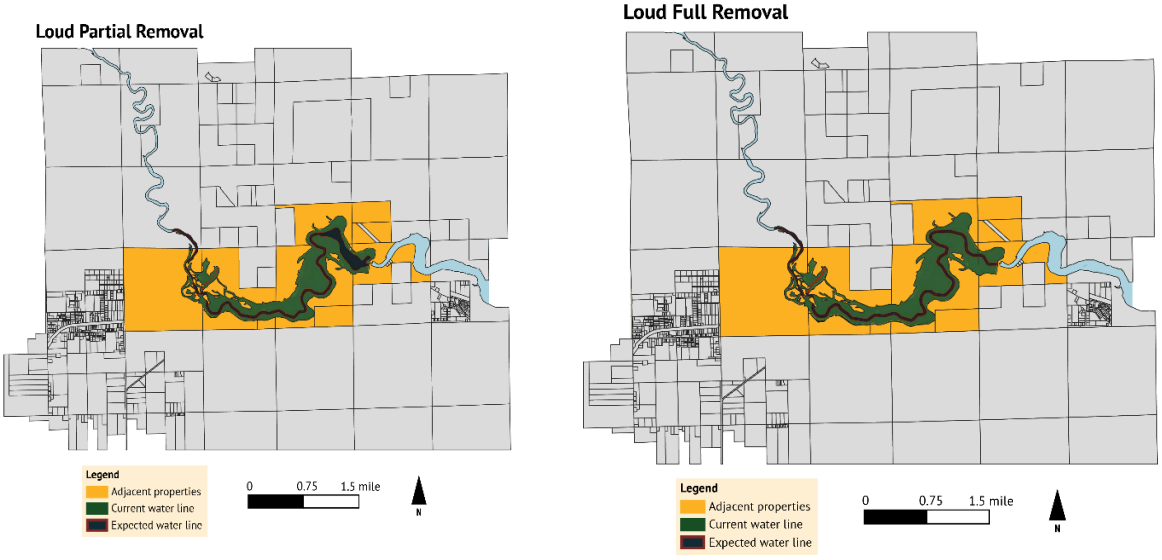
Loud Dam is located in Oscoda Township, Iosco County, about nine miles south of the town of Glennie and immediately west of Five Channels Dam. It is one of six Consumers hydroelectric dams on the Au Sable River. Oscoda Township is home to about 6,800 individuals, just over a quarter of the county population. Loud Dam is about 40 feet tall and 2,180 feet in length. The resulting impoundment, Loud Dam Pond, covers an area of approximately 790 acres. Loud Dam was completed in 1913.

Environmental Context

While no decision has been made on the Loud Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



There would likely be minimal differences in wetland and upland habitat formation following the partial or full dam removal. The MNFI wetland viewer map indicates a significant wetland complex will likely form north of and immediately adjacent to the dam impoundment. This wetland complex, the tributaries entering the impoundment, and the smaller wetland formation to the south of the lower impoundment near the dam are all likely to influence wetland formation within the dam impoundment under both partial and full dam-removal scenarios. These habitats may form on the existing wetlands adjacent to the impoundment, tributaries, and the restored river channel alignment.

Economic Impact Analysis

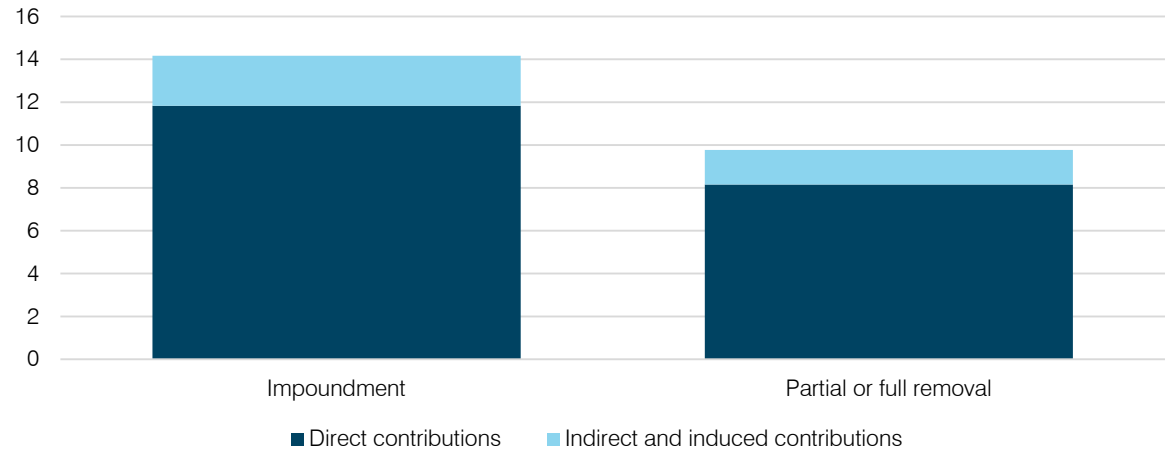
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state

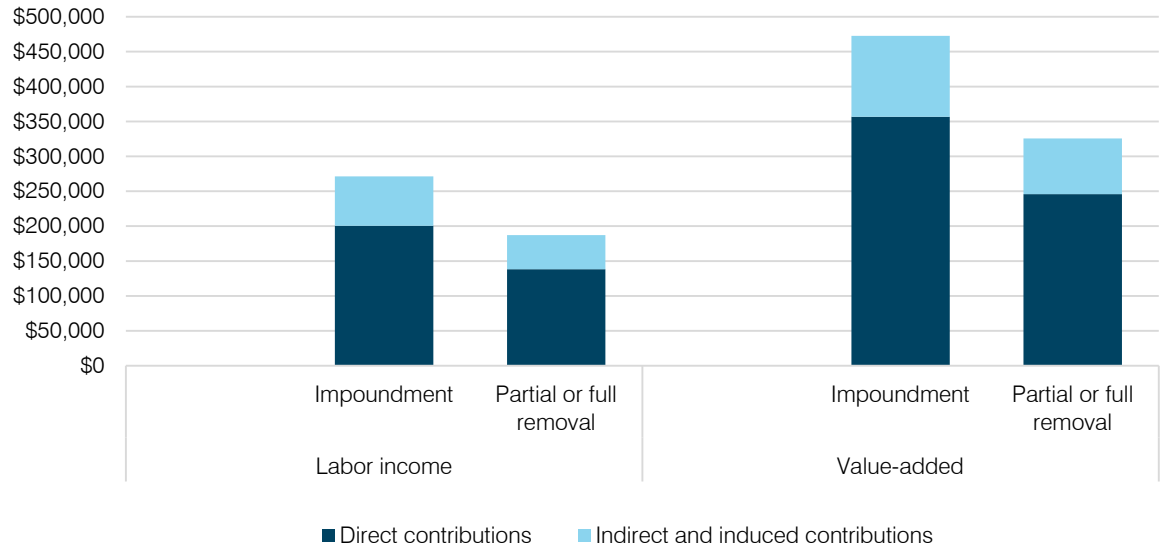
sources, this analysis estimates the short-term economic impact of the full removal of the Loud Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 4 fewer jobs in the region and a $146,927 reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

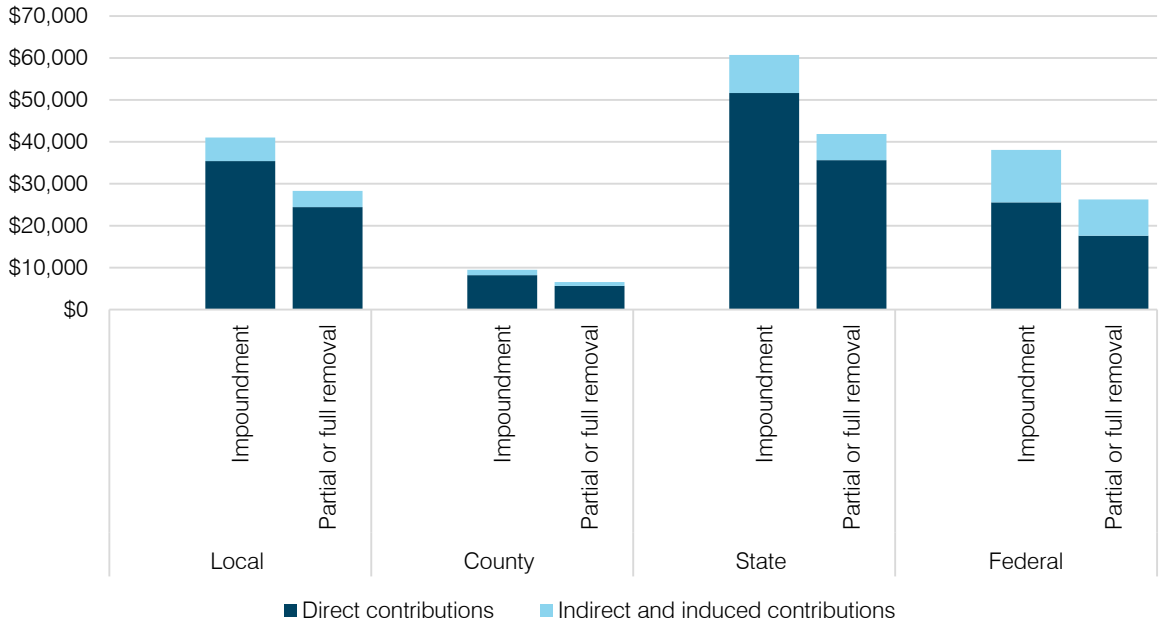
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $46,341 fewer contributions in total annual tax revenue, with $34,509 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Loud Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Loud Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Loud Dam, which includes:

- A reduction of $146,927 in gross regional product and 4 jobs
- A reduction of $46,341 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Mio Dam Economic Impact Study

PSC

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
MIO DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

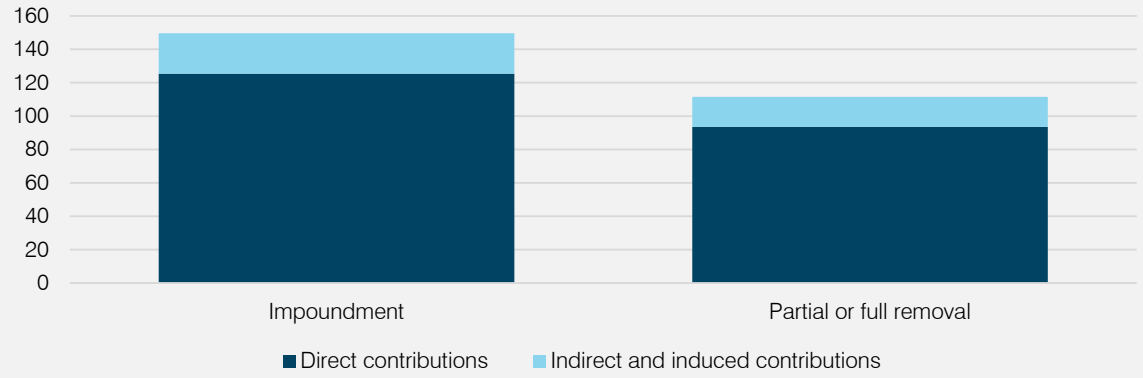
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's Methodology section.

Regional Economic and Employment Contributions

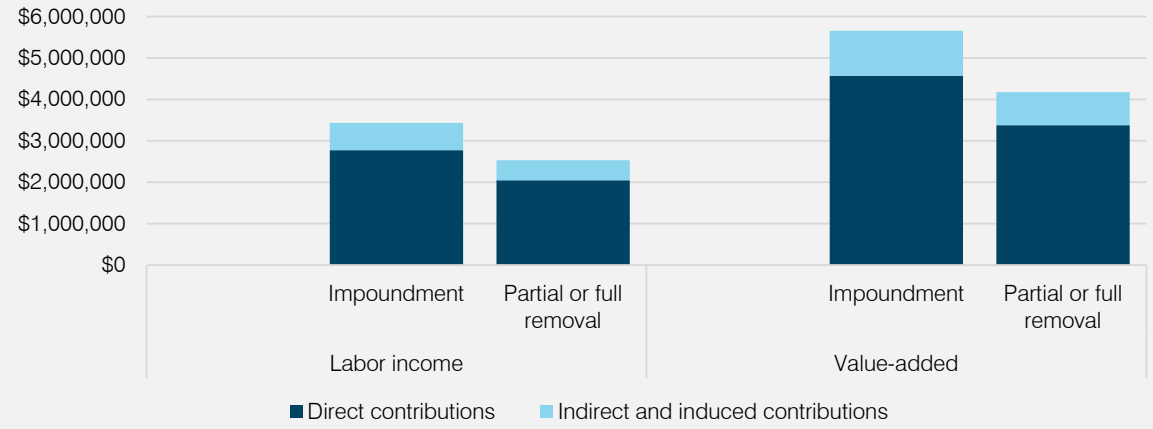
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Mio Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 39 fewer jobs in the region and a $1.5 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

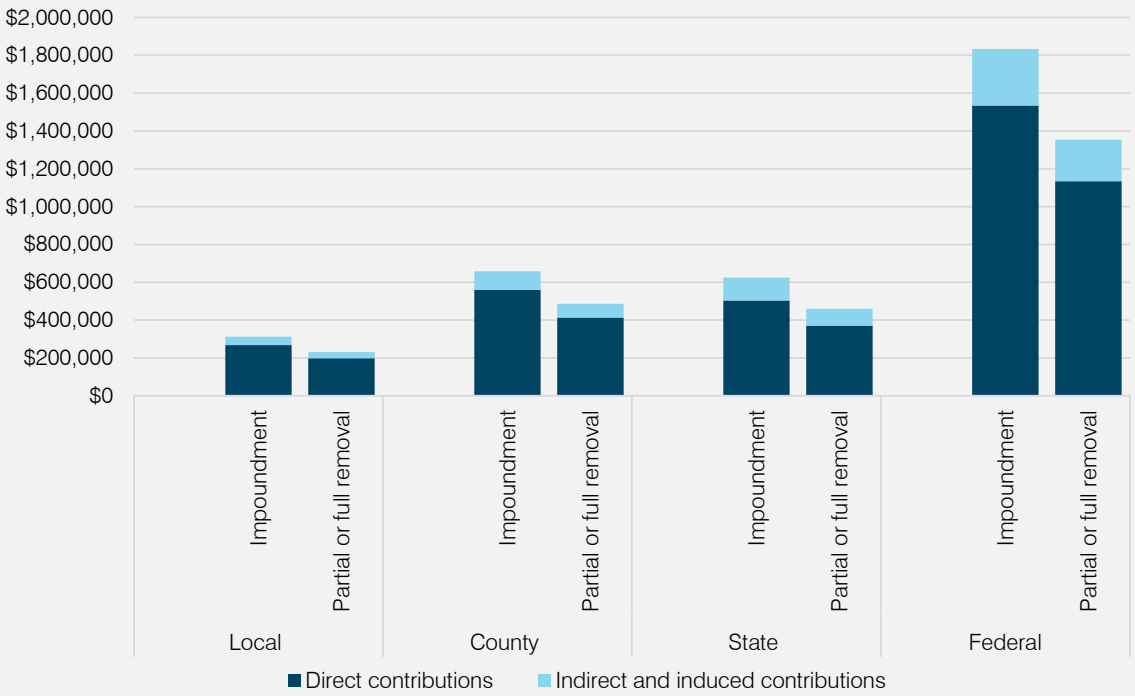
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $897,308 fewer contributions in total annual tax revenue, with $417,575 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Removal
Number of Properties Analyzed	30
Expected Net Property Value Impacts	
Assessed value	-$344,704
Market value[1]	-$689,408
Expected Net Property Tax Revenue Impacts[2]	
Taxable value	-$288,683
Tax revenues	-$9,906
Average millage	34.315

Sources: Oscoda County Equalization Department, PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's Methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g., partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Mio Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Mio Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Mio Dam is located in Big Creek Township, just north of Mio, a small unincorporated community in Oscoda County. The county population is approximately 8,300. Completed in 1916, the Mio Dam is about 20 miles northwest of the Loud Dam. It is one of six Consumers hydroelectric dams on the Au Sable River in northwestern Michigan. Mio Dam is 38 feet high and about 2,120 feet long. The impoundment, Mio Pond, is approximately 661 acres in area.

Environmental Context

While no decision has been made on the Mio Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and the final topographic surface after partial or full dam removal.

The historic survey map of the Mio Dam impoundment indicated cedar swamps were prevalent on the southern portion of the middle impoundment. There are a few areas where wetlands would be likely to be more prominent, such as where tributaries enter the impoundment or wetland complexes are present adjacent to the impoundment. Otherwise, the remaining areas of the impoundment could potentially form upland habitat. The interpretation of habitat formation is expected to be similar for the partial and full dam removal scenarios.

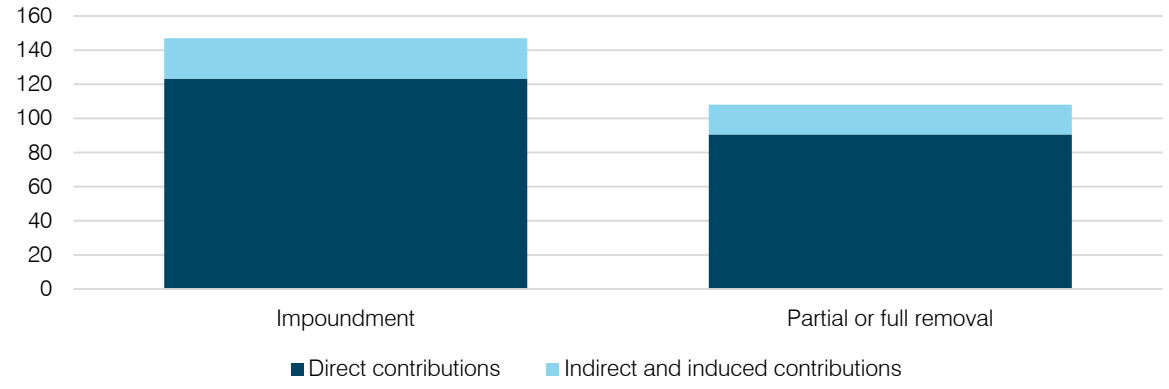
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

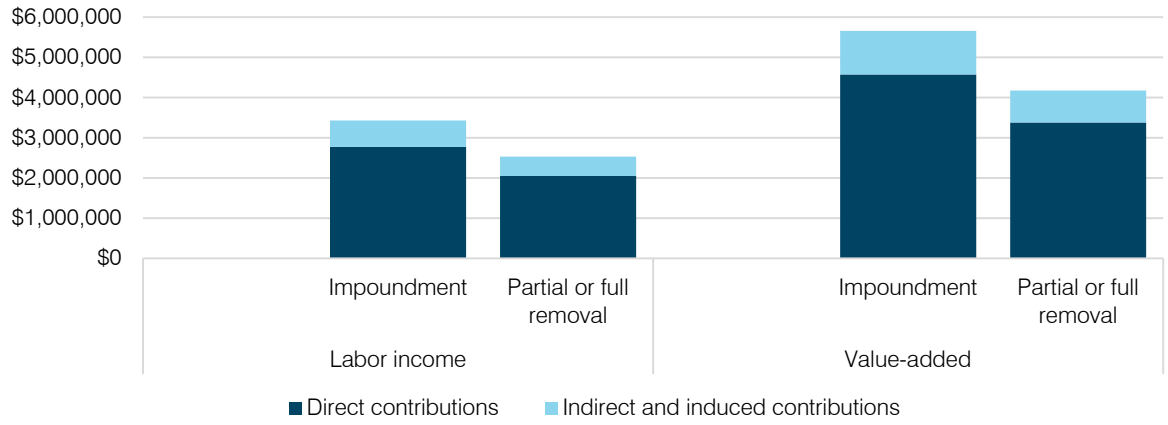
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. As seen in Exhibit 8, a partial removal would still leave a substantial impoundment near the dam, but unless recreational asset managers invest in extending water access points, there will still be significant impacts on site usage. As detailed in the Methodology section of this report, PSC analysis does not make assumptions about what actions individuals, businesses, or organizations would take in response to a partial or full dam removal, so the results of a partial dam removal analysis are likely to be similar to those of a full dam removal scenario. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Mio Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 39 fewer jobs in the region and a $1.5 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

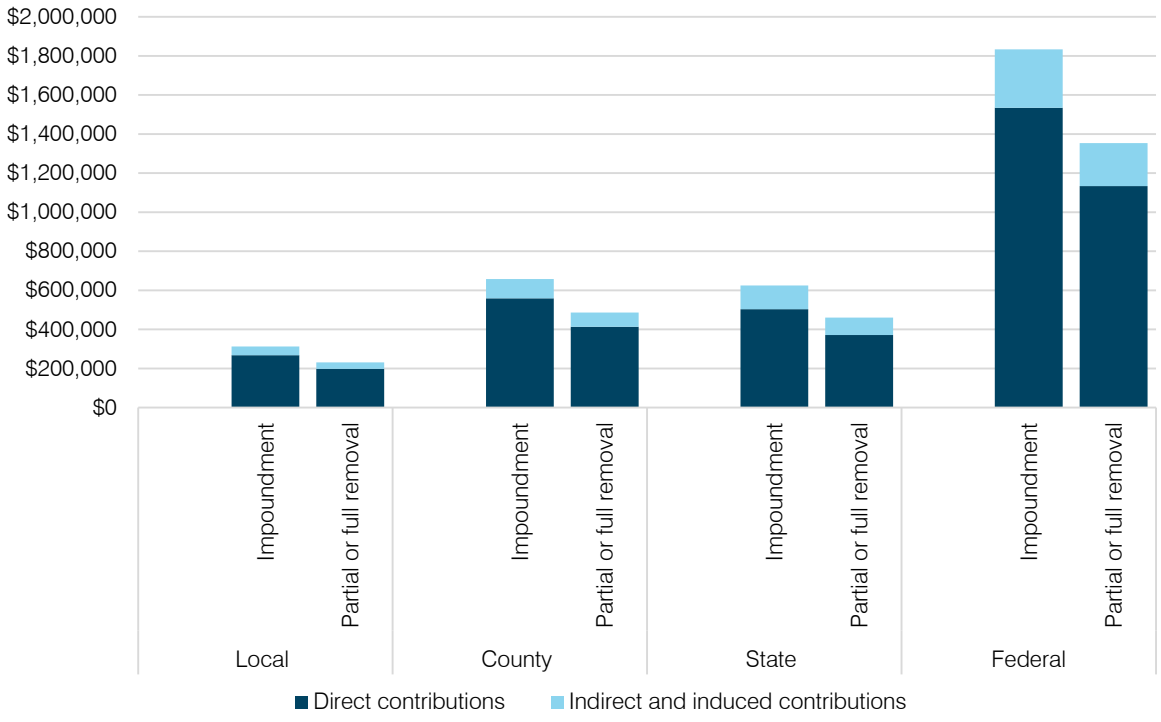
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $897,308 fewer contributions in total annual tax revenue, with $417,575 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both partial and full removal scenarios, but in some cases, including at Mio Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

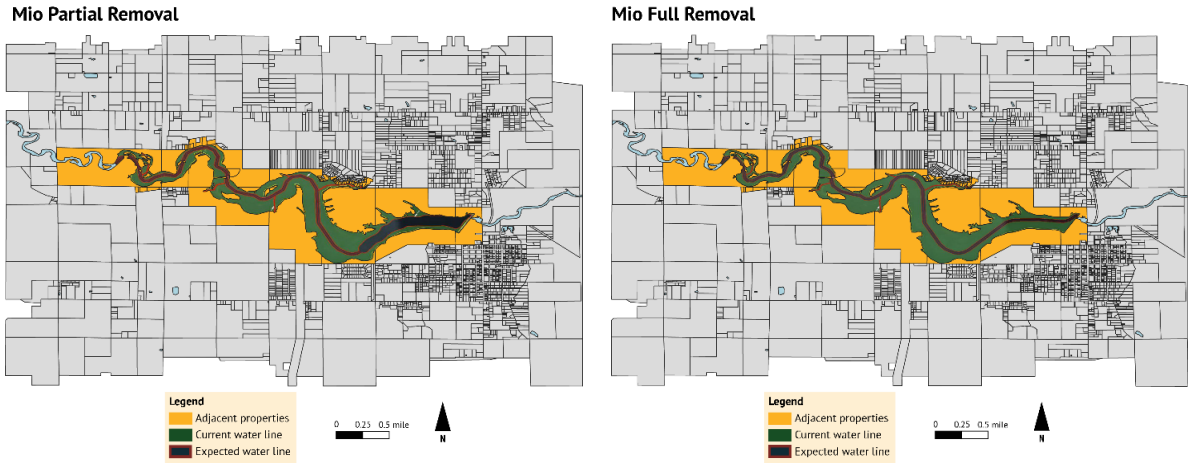
While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

Because the residential lots adjacent to Mio Pond include 30 properties well away from the actual dam, the upstream water footprint for both partial and full dam removal largely looks the same where the residential properties exist (see Exhibit 8). Residential property values and property tax revenues are likely to be the same under both dam modification options.

PSC determined the potential net change in residential property values and associated annual property tax revenues, highlighted in Exhibit 9. The collective loss in market value, estimated from assessed property values, is $689,408. As taxable and market values differ, the reduction in residential tax revenues is expected to be about $9,906.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Partial/Full Removal
Number of Properties Analyzed	30
Expected Net Property Value Impacts	
Assessed value	-$344,704
Market value[3]	-$689,408
Expected Net Property Tax Revenue Impacts[4]	
Taxable value	-$288,683
Tax revenues	-$9,906
Average millage	34.315

Sources: Oscoda County Equalization Department, PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Mio Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Mio Dam, which includes:

- A reduction of $1.5 million in gross regional product and 39 jobs
- A reduction of $897,308 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial or full removal of the dam will also impact adjacent property values, contributing:

- A reduction of $689,408 in market value to adjacent properties
- A reduction in $9,906 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Rogers Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
ROGERS DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

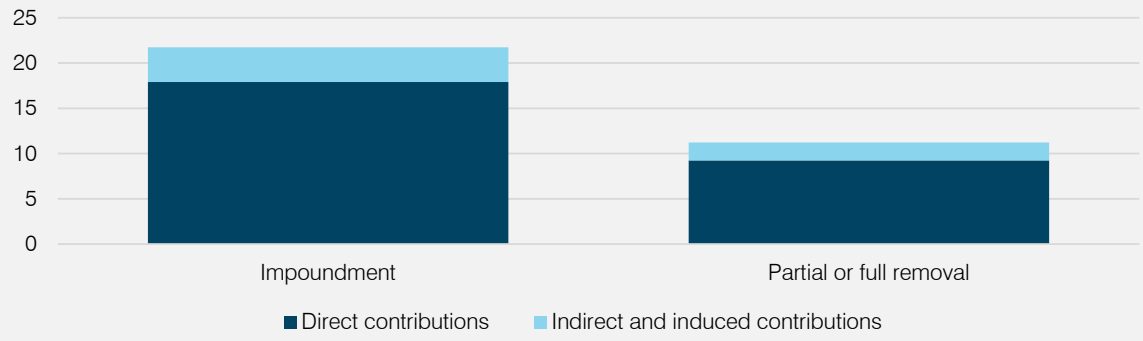
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

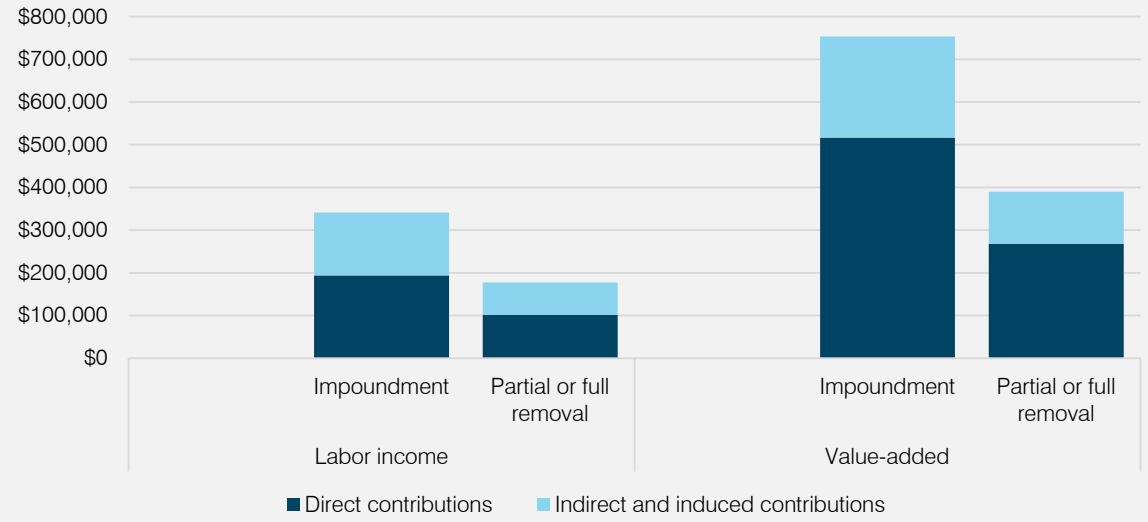
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. After reviewing maps of the area, PSC conducted a single recreational analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Rogers Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 11 fewer jobs in the region and a $363,395 reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

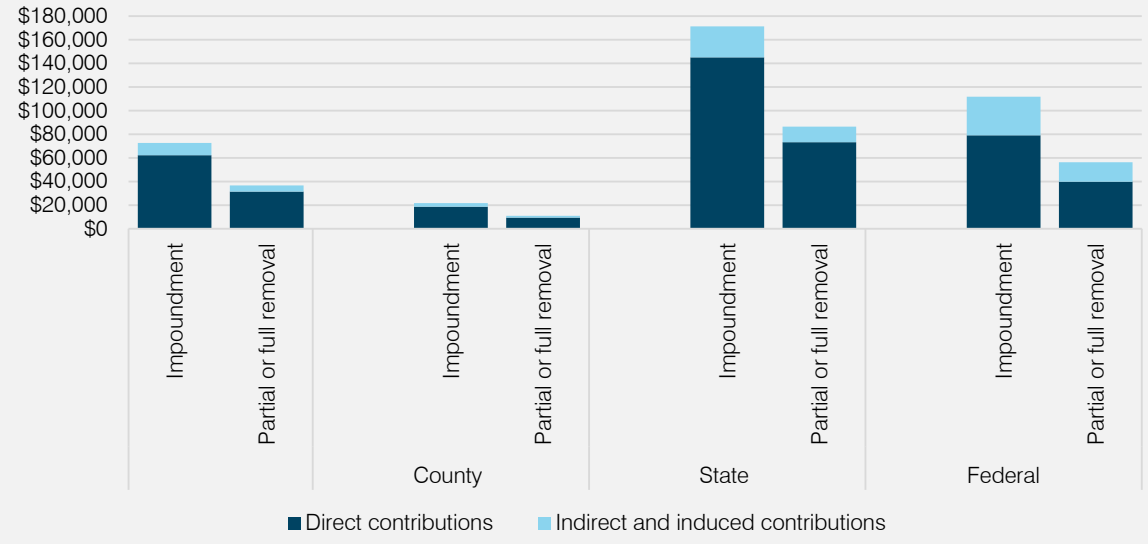
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $110,316 fewer contributions in total annual tax revenue, with $93,150 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Partial Removal	Full Removal
Number of Properties Analyzed	475	475
Expected Net Property Value Impacts		
Assessed value	-$3,354,871	-$6,384,083
Market value[1]	-$6,709,742	-$12,768,166
Expected Net Property Tax Revenue Impacts[2]		
Taxable value	-$2,873,793	-$3,163,688
Tax revenues	-$95,763	-$104,423
Average millage	33.323	33.323

Sources: Mecosta County Equalization Department, PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Rogers Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Rogers Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Completed in 1906, Rogers is Consumers Energy's oldest hydroelectric dam. It is located in Mecosta Township, Mecosta County, about six miles south of Big Rapids. Mecosta Township has approximately 2,700 residents, while Big Rapids—home to Ferris State University—has a population of approximately 9,000. The earthen embankment is 800 feet wide and about 40 feet tall. The impoundment, Rogers Dam Pond, is approximately 449 acres in area and provides residents and visitors with recreational opportunities, including boating and fishing.

Environmental Context

While no decision has been made on the Rogers Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Over time, wetlands will begin to take hold, forming where the hydrologic conditions persist for their creation. This transition likely will occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal.

The historic survey map of the Rogers Dam impoundment does not indicate any marsh or swamp land types. It did note significant areas of "timbers," which we interpreted as uplands. Combining the historic survey map with the MNFI wetland map viewer indicates that wetlands may form along inside bends of the restored river channel, near wetland complexes adjacent to the existing impoundment, and along tributaries entering the impoundment. A partial dam removal scenario would likely have similar delineations of upland and wetland habitat, with the potential of slightly more wetlands immediately adjacent to the small impoundment. Wetland formation in that scenario would be highly dependent on the final topographic grading within the former impounded area.

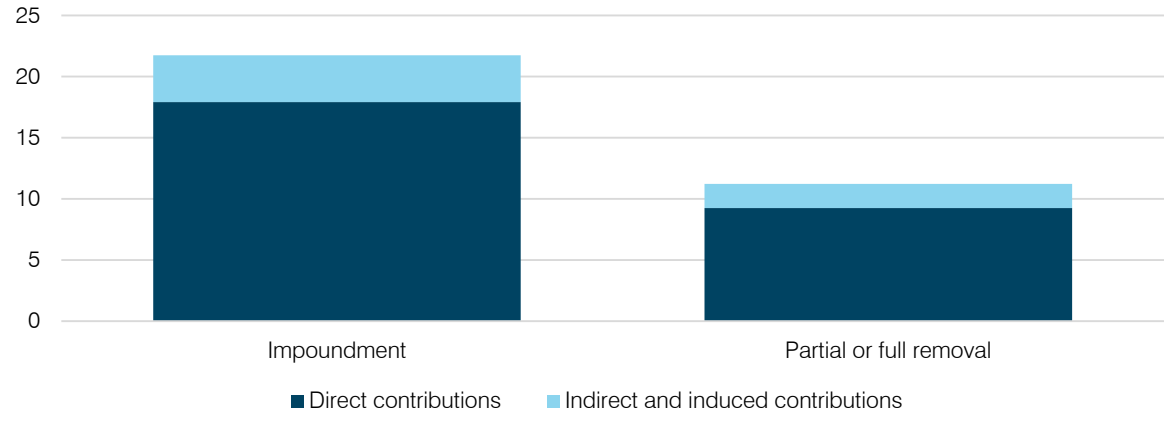
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

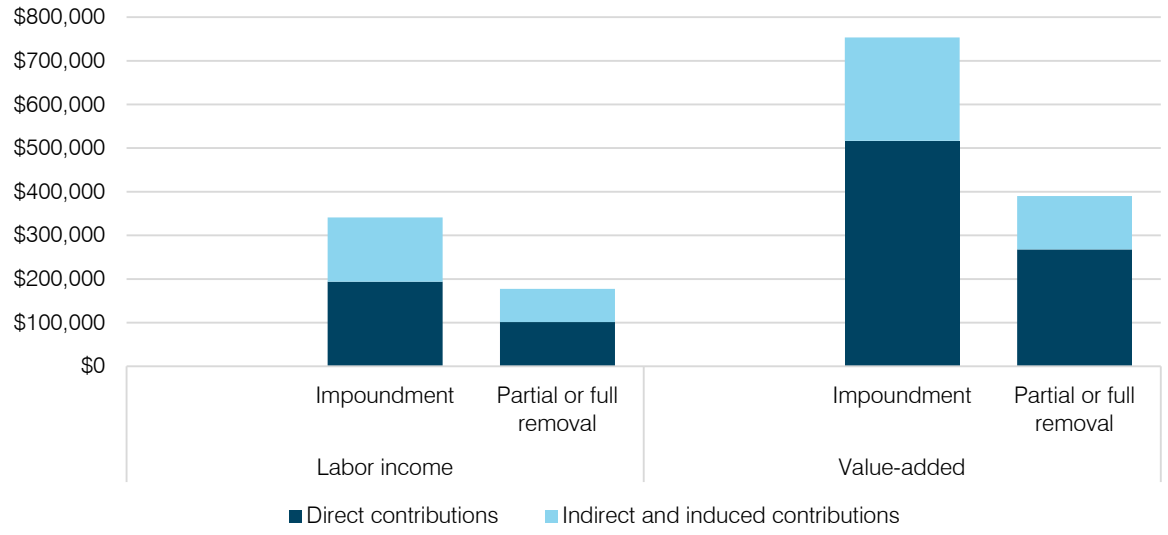
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single recreational analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Rogers Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 11 fewer jobs in the region and a $363,395 reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

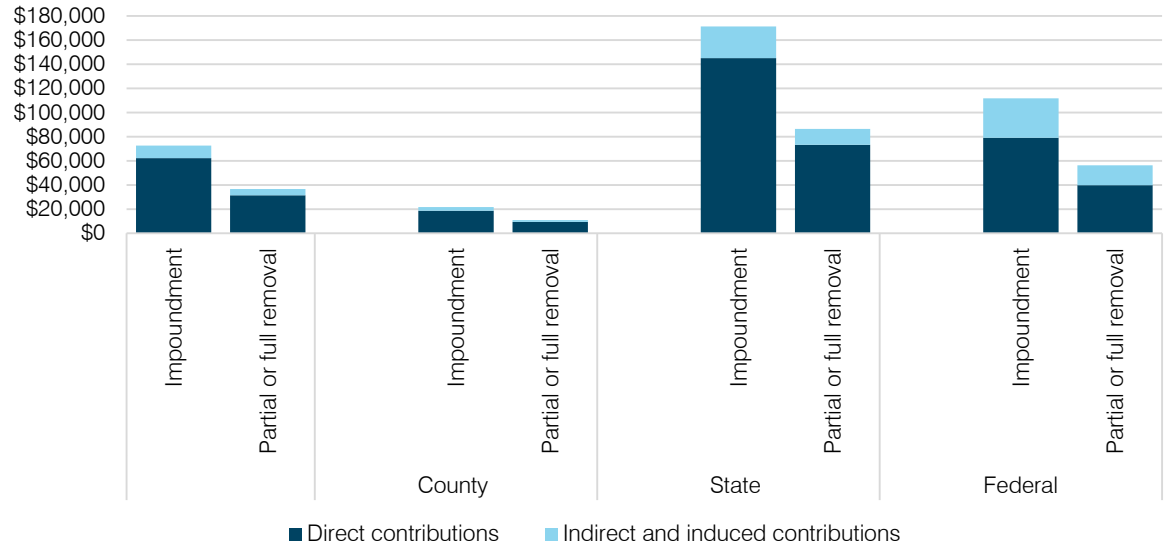
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $110,316 fewer contributions in total annual tax revenue, with $93,150 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Rogers Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

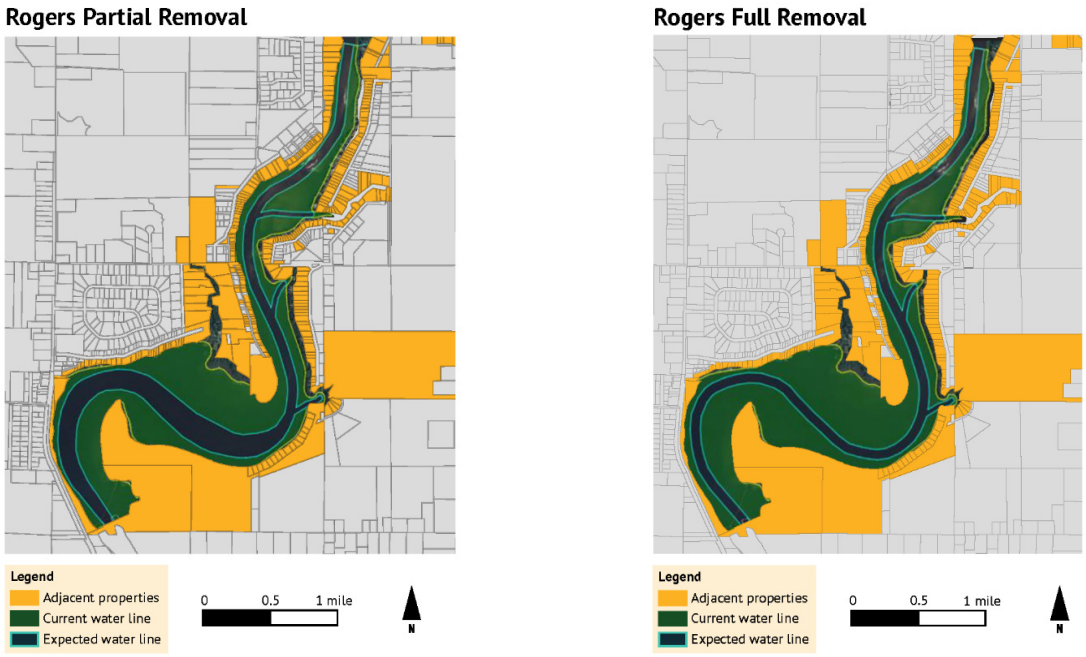
While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Value Analysis

Residential lots adjacent to the existing impoundment include 492 properties around the Roger Dam Pond. To what extent residential property values would be affected by a partial or full dam removal depends on a property's proximity to the resulting water's edge. Exhibit 8 shows two maps of residential property plats around Rogers Dam Pond, one depicting the extent of the expected water line under a partial dam removal and one showing the same under a full dam removal. The expected extant of the water body after dam modification is shown by the green and blue insert. All other points along the river system are assumed to be invariant between the two scenarios and from the current relationship with the water system.

PSC determined the potential net change in property values and associated annual property tax impact, highlighted in Exhibit 9. Accordingly, the relatively small impoundment expected with a partial dam removal will provide waterfront access to more properties than under a full removal. Because more lots will have greater water proximity than with full removal, the partial-removal scenario would be expected to have a lesser overall negative effect on overall residential property values and annual residential property tax revenues. As Exhibit 9 indicates, 475 impoundment-adjacent properties will experience a cumulative reduction in market values of $6.7 million and $12.8 million under the partial and full dam removal scenarios, respectively. This is expected to reduce annual residential property tax revenues by about $95,763 for a partial removal or $104,423 for a full removal.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Partial Removal	Full Removal
Number of Properties Analyzed	475	475
Expected Net Property Value Impacts		
Assessed value	-$3,354,871	-$6,384,083
Market value[3]	-$6,709,742	-$12,768,166
Expected Net Property Tax Revenue Impacts[4]		
Taxable value	-$2,873,793	-$3,163,688
Tax revenues	-$95,763	-$104,423
Average millage	33.323	33.323

Sources: Mecosta County Equalization Department, PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Rogers Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Rogers Dam, which includes:

- A reduction of $363,395 in gross regional product and 11 jobs
- A reduction of $110,316 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial removal of the dam will also impact adjacent property values, including:

- A reduction of $6,709,742 in market value to adjacent properties
- A reduction in $95,763 in local and state property tax revenue due to the decreased market value

The full removal of the dam will also impact adjacent property values, including:

- A reduction of $12,768,166 in market value to adjacent properties
- A reduction in $104,426 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Tippy Dam Economic Impact Study

PSC

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
TIPPY DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 13
Property Analysis 16
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

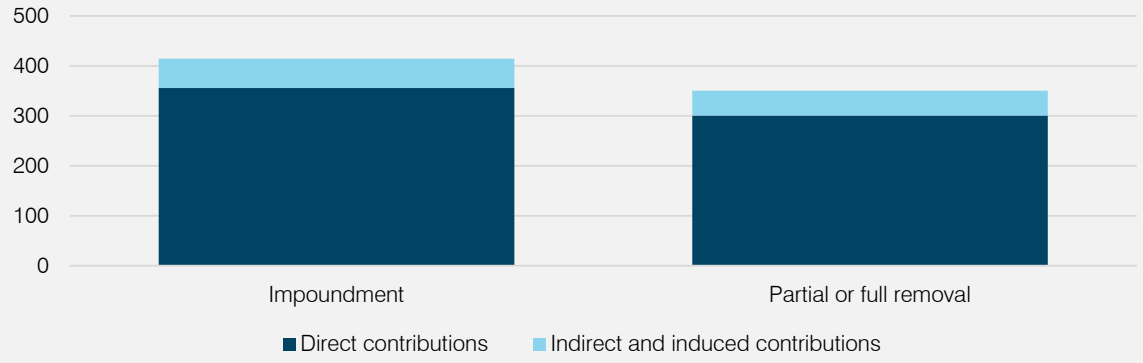
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

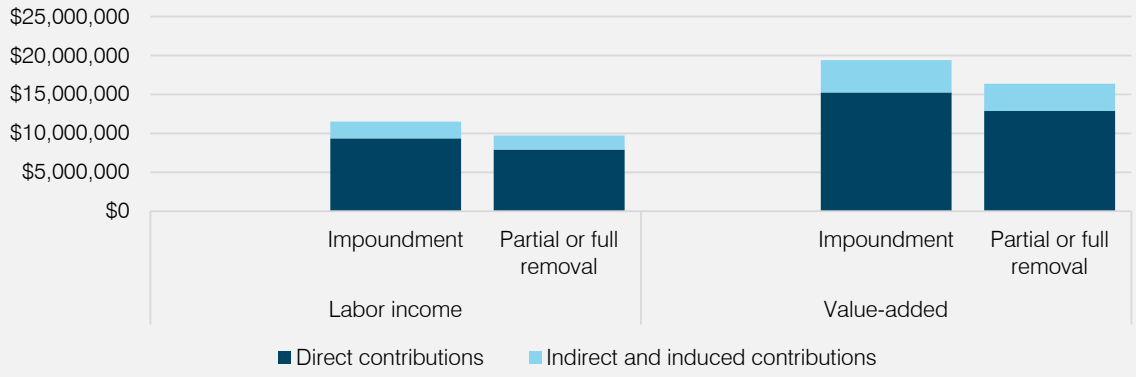
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Tippy Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 64 fewer jobs in the region and a $3 million reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

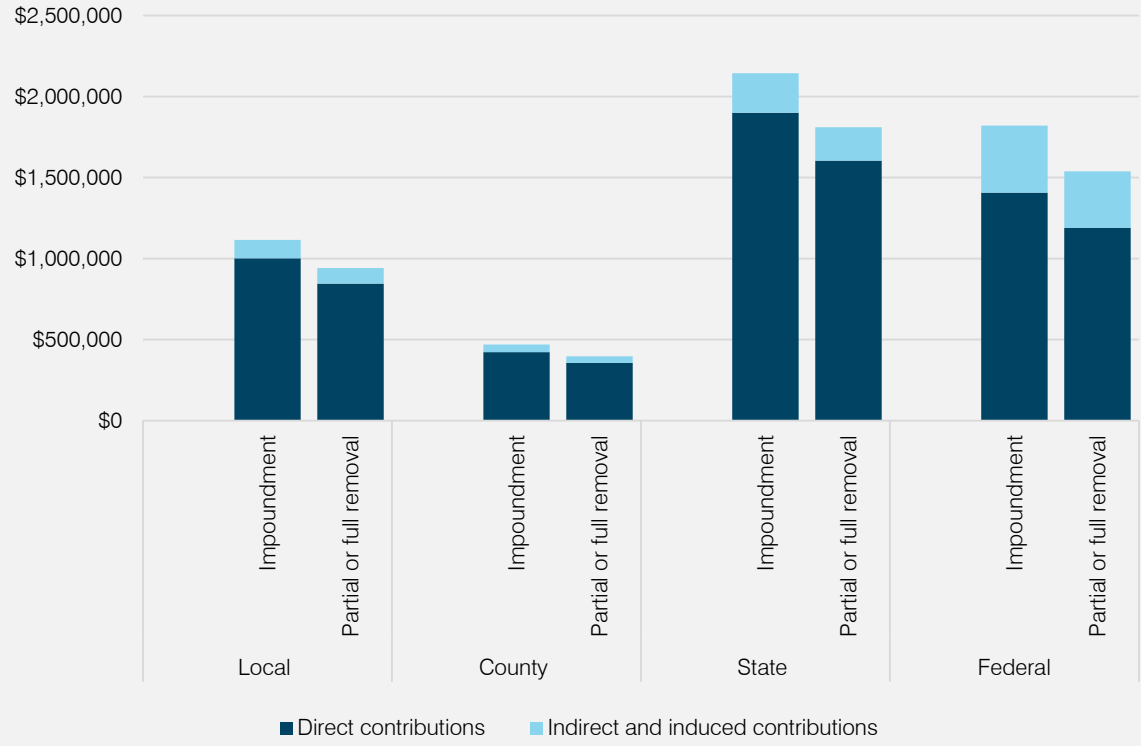
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $862,909 fewer contributions in total annual tax revenue, with $580,561 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

PSC compiled assessed and taxable values from the Manistee County Equalization Department and the Wexford County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on impoundment-adjacent properties. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Tippy Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

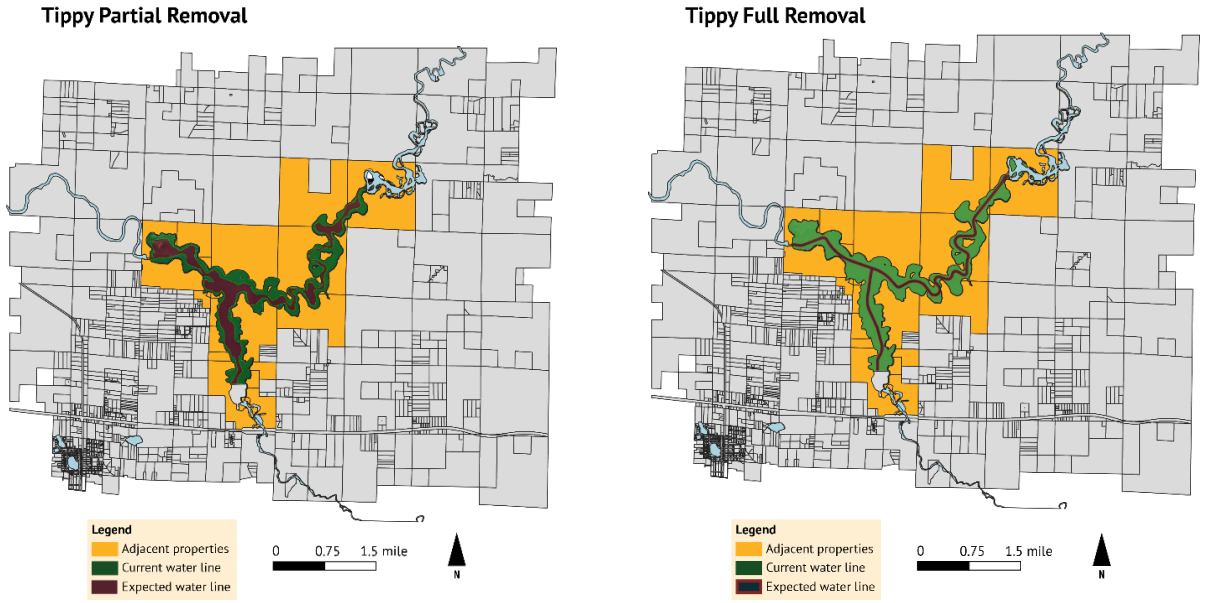
Along with Hodenpyl Dam, Tippy Dam is situated on the Manistee River. The surrounding township, Dickson, has a population of about 980 individuals. Completed in 1918, Tippy is the second largest hydroelectric dam in Michigan. It is about 82 feet high and 830 feet in length. Tippy Dam Pond measures about 1,330 acres. It has the second largest generating capacity of the 13 Consumers Energy hydroelectric dams, after Hardy Dam.

Environmental Context

While no decision has been made on the Tippy Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal. Exhibit 4 shows the projected shifts in water line and current impoundment-adjacent parcels.

EXHIBIT 4. Partial and Full Removal Parcel Analysis



There is a significant wetland complex and area of undisturbed land directly north and adjacent to the main portion of the Tippy Dam impoundment. This wetland complex extends to the east side of the impoundment's northern lobe.

Partial dam removal is likely to produce significantly different environment effects than a full dam removal. Given the assumptions in the partial removal scenario and the narrow nature of the existing impoundment, it is likely that a partial removal would have a relatively small impact on the habitat surrounding the impoundment. It is likely a large majority of the newly exposed bottomlands would develop as wetlands. There may be some fringe upland development, but it would likely be localized to higher topographic areas and on the southern lobe of the current impoundment.

Under a full removal scenario, it is difficult to predict where wetland and upland formation might occur outside the expected areas, such as inside channel bends and along valley walls with wetland seeps. As with the partial dam-removal scenario, it is likely a large majority of the area on the north side of the impoundment and northern lobe will form wetlands due to the documented wetland. Full dam removal is more likely to produce uplands at the southern lobe outside the immediate influence of the restored river channel. The extent to which this would happen is dependent on the final topographic grading surface.

Economic Impact Analysis

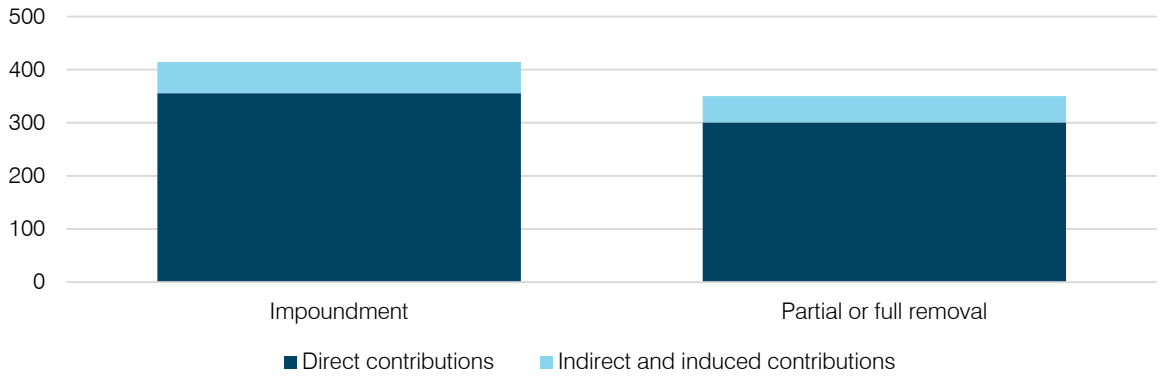
To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to

estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

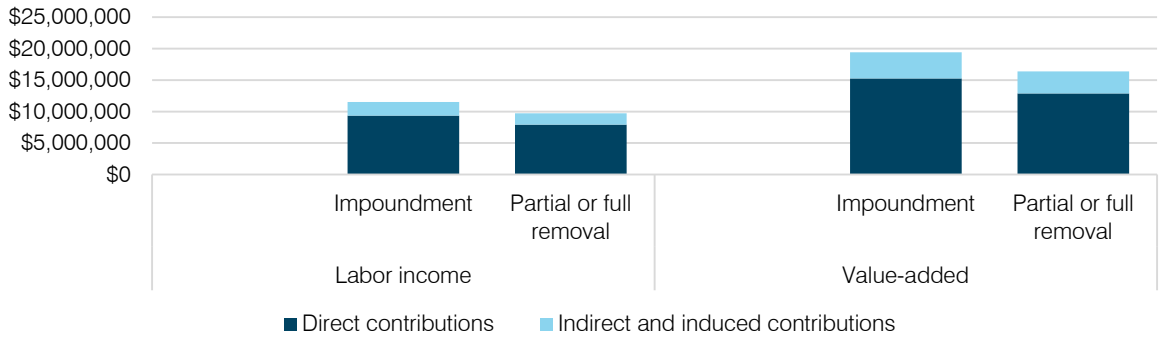
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Tippy Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 64 fewer jobs in the region and a $3 million reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

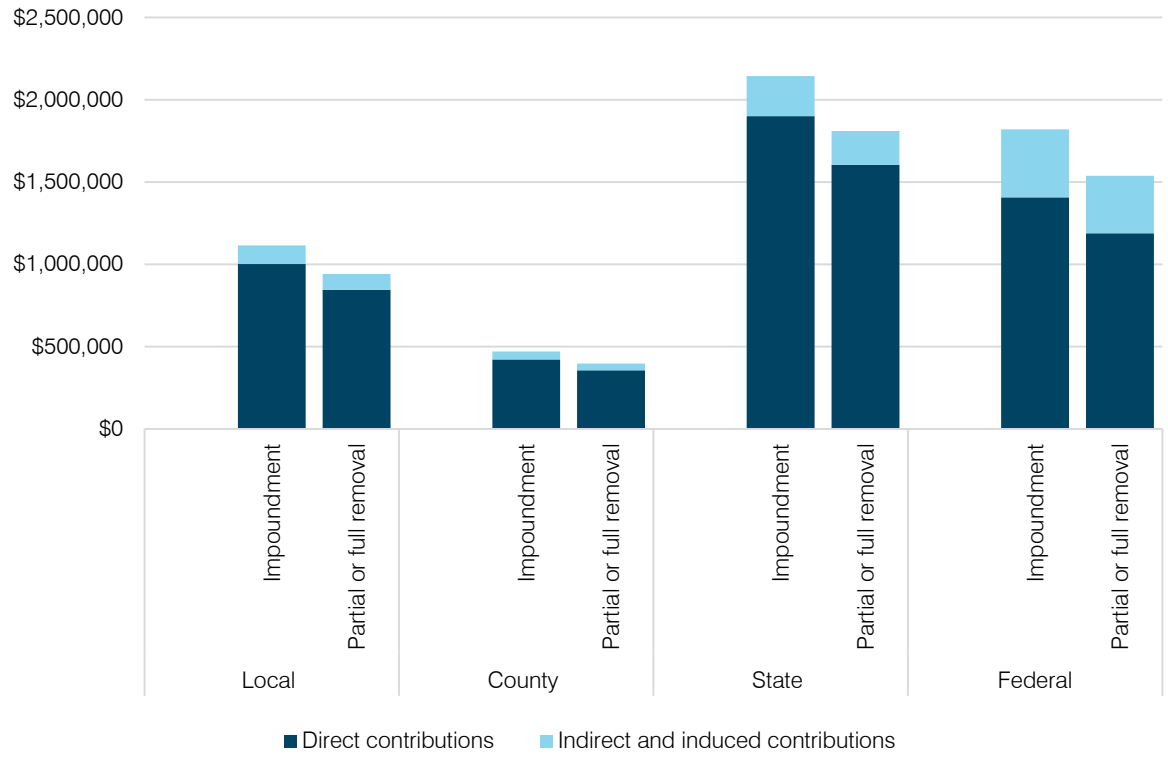
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will result in $862,909 fewer contributions in total annual tax revenue, with $580,561 of that reduction at the local, county, and state levels (Exhibit 7).

EXHIBIT 7. Tax Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at Tippy Dam Pond, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

Property Analysis

PSC compiled assessed and taxable values from the Manistee County Equalization Department and the Wexford County Equalization Department for the tax (calendar) year 2022. In other Consumers dam studies, PSC conducted a property analysis to estimate the impact of partial and full dam removal on impoundment-adjacent properties. Currently, there are fewer than 20 properties around the impoundment not owned by Consumers or the federal government, so PSC did not conduct this type of analysis for this study.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Tippy Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Tippy Dam, which includes:

- A reduction of $3 million in gross regional product and 64 jobs
- A reduction of $862,909 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Webber Dam Economic Impact Study

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Table of Contents

EXECUTIVE SUMMARY 4
Regional Economic and Employment Contributions 4
Property Value Analysis 6
BACKGROUND 7
Approach 7
Methodology 8
WEBBER DAM 11
Background 11
Environmental Context 11
ECONOMIC IMPACT ANALYSIS 12
Recreational Analysis 12
Property Value Analysis 15
CONCLUSION 17
REFERENCES 18
APPENDIX A: METHODOLOGY 21

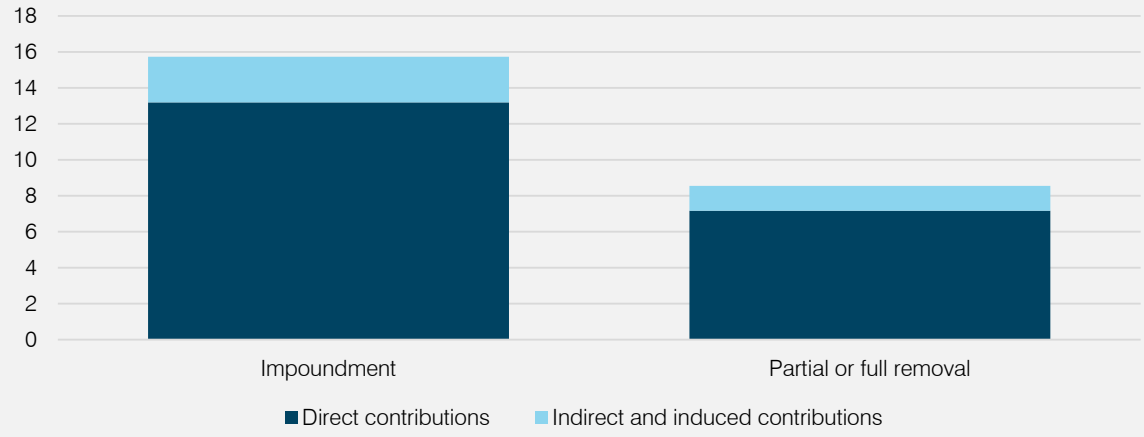
Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to analyze the impacts of partial or full removal of dams on the economies surrounding its 13 river hydroelectric facilities. This work complements PSC's ongoing efforts to assist Consumers in collecting feedback from individuals, organizations, and businesses that would be affected by dam decommissioning. The previous dam studies examined how the dams currently affect the economies of the areas in which they are situated. These economic impact studies project the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section.

Regional Economic and Employment Contributions

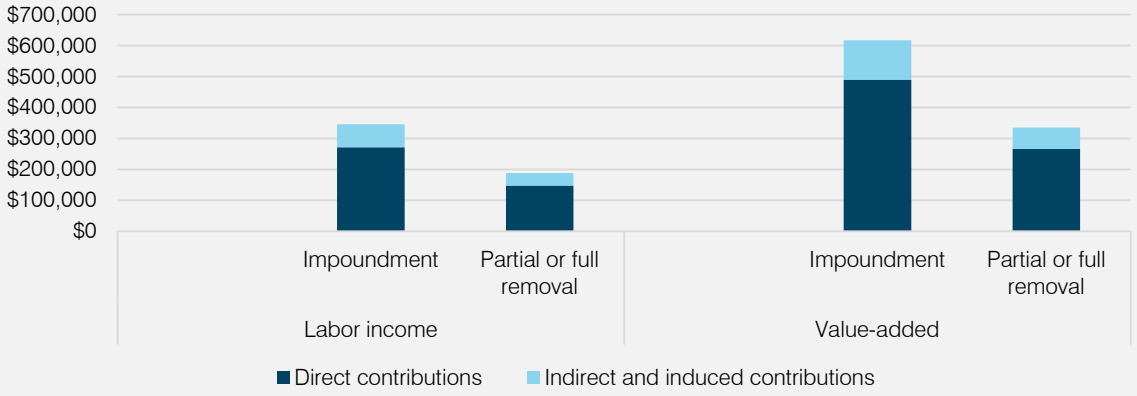
IMPLAN, a widely used, reputable economic modeling software, enables PSC to estimate the effects of shifts in expenditures made by recreational users in the area after a hypothetical dam removal. The net change in these expenditures is referred to as direct economic effects, which the IMPLAN model uses to estimate indirect and induced effects, which are secondary expenditures resulting from supply chain purchases, worker spending, and other subsequent expenditures. These measures of new economic activity are reported along with other economic impact measures, including jobs, labor income, and total regional income. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Webber Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 7 fewer jobs in the region and a $281,817 reduction in value-added to the local economy (Exhibits 1 and 2).

EXHIBIT 1. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

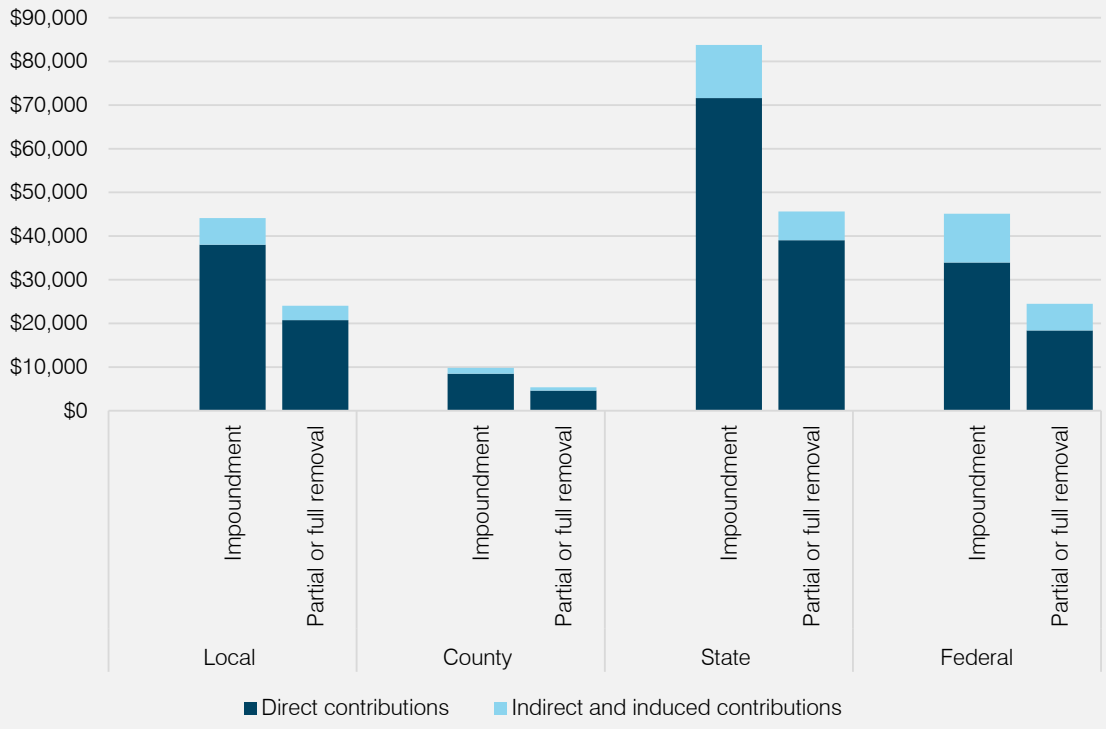
EXHIBIT 2. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $83,332 fewer contributions in total annual tax revenue, with $62,672 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 3. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Property Value Analysis

To better understand the dam removal impacts on residential property values, PSC analyzed the potential net change in property values and associated annual property tax impact (Exhibit 4).

EXHIBIT 4. Property Analysis Results

	Partial or Full Removal
Number of Properties Analyzed	76
Expected Net Property Value Impacts	
Assessed value	-$550,058
Market value[1]	-$1,100,116
Expected Net Property Tax Revenue Impacts[2]	
Taxable value	-$292,109
Tax revenues	-$9,943
Average millage	34.038

Sources: Iona County Equalization Department; PSC analysis

[1] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[2] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Background

Consumers Energy is developing a long-term strategy for its 13 river hydroelectric facilities. This work is in anticipation of an upcoming relicensing decision, compounded with significant infrastructure upgrades needed to remain in compliance with the Federal Energy Regulatory Commission licensing requirements for each dam. While Consumers is handling much of the work internally, the firm engaged PSC in 2022 to assist with gathering input from the communities where the dams are located as well as more broadly across the state.

In summer and fall 2022, PSC conducted more than 20 meetings with local officials, the public, and key stakeholders. At the meetings, PSC provided the communities with preliminary information on the process for dam removal and collected feedback to assist Consumers in developing its strategy. As part of the feedback collection process, PSC also surveyed more than 3,000 landowners with property abutting Consumers-owned land and created a website to solicit feedback and provide more context on long-term strategy development.

Consumers also engaged PSC to determine how much local economic activity can be attributed to dam-related industries. Previous dam economic contribution studies examined how the dams currently affect the economies of the areas in which they are situated. This economic impact study projects the potential shifts in property values and the local economy within a year of partial or full dam removal under the assumptions outlined in the report's methodology section. To complete this analysis, PSC conducted interviews and collected economic data to complete the assessments. Utilizing IMPLAN, PSC estimated the direct economic effects of spending associated with recreational activity and modeled supply chain purchases, worker spending, and other indirect effects. All the effects were modeled in three categories:

- **Employment:** The number of full- and part-time jobs associated with an industry.
- **Labor income:** The dollar total of employee compensation and proprietor income; the latter is associated with self-employed individuals.
- **Value-added:** The gross regional product, which includes labor income, other property income (e.g., rents and profits), and indirect business taxes (e.g., excise and sales taxes).

For more detailed information on IMPLAN methodology and terminology, see Appendix A.

Approach

This economic *impact* analysis differs from the previously completed economic *contribution* analysis. While both approaches use the same tools to simulate the economic effects of a resource, they differ in some basic assumptions. An economic contribution analysis is a current-state snapshot of the overall market and makes no assumptions about future changes in the underlying economy. An economic impact analysis measures changes in economic activity associated with an event. For this report, partial or full dam removal (considered singly as a full removal) is the event under assessment. A partial removal refers to a scenario in which the river hydroelectric facility is decommissioned yet a structure persists in the river to serve a purpose such as artificially retaining higher water levels or preventing upstream movement of invasive species, such as the sea lamprey.

An economic impact analysis must address several key issues, including the uncertainty of the exact shifts in the environment and recreational activity patterns at each river hydro site, the nonmarket character of many of those changes, and the time horizon for those shifts to occur and then stabilize (Smith 2006). To address uncertainty about how removal would change systems, PSC assumed that the water body will return generally to the river channel as depicted on maps prior to river hydro construction. PSC also focused only on how these changes impact economic behavior and could not place economic value on purely environmental and biological changes that did not directly impact human economic behavior. Finally, to address time-horizon issues, PSC estimated the impact in the first year after dam removal without assumptions regarding future investment, strategic planning, or changes in property ownership. Despite the likelihood of such planning and investment activity in the years between an announcement and completion of partial or full dam removal, it is difficult to accurately estimate its intensity and direction. As a result, PSC did not make any assumptions about its ability to influence economic impacts.

Methodology

PSC conducted a literature review, interviews, data collection and analysis, and utilized IMPLAN to complete the economic impact studies.

Data Collection

Literature Review

PSC conducted a review of applicable research literature and interviewed public and private recreational asset managers to develop assumptions about how the shift from an impoundment to the natural river state would affect recreational activity in the area within the first year of removal. While the research literature indicates that free-flowing rivers can provide greater recreational benefits than impounded rivers over the medium to long term, there is limited research on the immediate impacts, especially without making assumptions about the levels and types of investment and planning during the transition (Loomis 2002; McKean et al. 2005, 2010; Kotchen et al. 2006; Robbins and Lewis 2008).

Stakeholder Interviews

To supplement assumptions derived from the research literature, PSC also conducted dozens of interviews with public officials, recreational asset managers, and other key stakeholders across all 13 sites to discuss the impoundments' economic contributions and re-interviewed a dozen recreational asset managers to explore the potential impacts of partial or full dam removal on various types of facilities (e.g., boat launches, seasonal and nightly campgrounds, roadside parks, etc.). All participants in the dam removal–focused interviews agreed that dam removal would result in a significant short-term reduction of recreational usage, particularly at sites that will lose waterfront access after dam removal. Interviewees also strongly agreed that not all sites and activities would experience the same impacts, which aligned with PSC's research findings. For example, it is likely that camping and day use associated with recreational boating and swimming would be significantly impacted, while hiking and mountain biking are also likely to be impacted, but to a lesser degree. PSC found that facilities directly on the impoundment, which were the focus of the economic contribution and impact analyses, were also the most likely to be impacted than sites further away from the impoundment that serve other recreational opportunities in the area.

Analysis Types

Recreational Analysis

To estimate the impact of partial or full dam removal, PSC combined research findings and local stakeholder feedback to develop a weighted average approach that adjusted the site visitation assumptions in the economic contribution analyses. If a site-specific activity (e.g., fishing, boating, etc.) would be impacted by dam removal, PSC included it in the development of a site-specific weighted average reduction in recreational activity. PSC applied adjustments based on the types of activities currently being offered at each the site that would be impacted by dam removal–related water-level changes.

It is important to note that with proactive planning and enough preparation time, site owners will likely have an opportunity to pivot their offerings to align with the new water level, but in this analysis, PSC has not made assumptions that anticipate sites experiencing increases in other types of recreational activity. For example, a campground that currently offers boat slips for recreational boating could shift to supporting more tubers and paddlers (e.g., canoeists, kayakers, stand-up paddleboarders). That change would mitigate the loss of recreational boaters and provide an opportunity for growth in other areas, but it is challenging at this time to make those assumptions. These visitation adjustments were then applied to the same expenditure profiles used in the economic contribution analysis.

Angler Trips

River systems are complex and predicting how nature and how humans will interface with the changed environment is difficult. In the economic contribution study, PSC estimated the number of anglers at each site and applied an inflation-adjusted, angler-specific expenditure profile to derive estimates of the transactions that could be attributed to current angler activity and associated economic contributions. This was viewed as the best approach from which to derive comprehensive estimates of the economic value of recreational fishing along the Consumers Energy river hydro facilities. An economic impact assessment must go one step further to conjecture how angler-related transactions will change following a major event (e.g. partial or full dam removal). This effort is much more challenging to derive, as it requires inferring how partial or full dam removal will affect angler activity. Many factors will influence angler responses, including how the fish populations will change and the fishing preferences of those who currently fish the area as well as who are the potential anglers that would be drawn to the area.

Unfortunately, recent academic research shows that generalizing how fish populations will adapt to dam removals is difficult and results in questionable conjectures at best, as the large number of variables makes both short- and long-term projections inexact (Hansen et al. 2023). Even the most data-limited approaches require significant amounts of data related to growth, feeding and prey preference, reproduction, and biomass data for each individual species in combination with a variety of system-wide parameters (Bellmore et al. 2017). They also require significant use of assumptions that may bias findings depending on the validity of the assumptions applied.

In addition to these challenges, it is especially difficult to predict the short-term impacts of shifts in fish populations, how those impacts will affect the fishery, and how that will affect the number of anglers and types of angling at a former-impoundment water body. Due to the narrow prediction window of this analysis, capital investment and shifts in recreational access are not assumed to take place, further complicating the estimation of changes in angler activity following partial or full dam removal.

PSC's approach to estimating the economic impacts is predicated on applying similar methods across all 13 hydro facilities, which further constrains the ability to collect data and develop models with sufficient predictive power to inform on the expected changes in angler opportunities. That is, the objective to be consistent across the 13 study sites further complicates the ability to apply a universal approach across these sites in a methodologically consistent and rigorous manner.

Furthermore, most studies note that these shifts are impacted by the time frame for species recovery and environmental shifts and rely on analyzing systems outside Michigan, which is another complicating factor in attempting to analyze these shifts in this analysis. While the determination was made not to estimate the economic impacts of changes in angler activity in the short-term response to partial or full dam removal, PSC includes a discussion of potential long-term benefits in the report.

Property Analysis

Projecting changes in property values is a major component in calculating the economic impact of partially or fully removing the Webber Dam. There are two related implications for the local economy. First, changes in the value of one's property affect household wealth. According to the Federal Reserve Board, the value of housing makes up approximately one-half of household wealth on average (Iacoviello 2011; Bostic et al. 2009). Accordingly, unexpected changes in property values can have significant implications for one's financial security. As households spend out of both income and wealth, a change in wealth has economic implications and may result in changes in household expenditures. While the potential for changes in household expenditures exists in what economists call the wealth effects on consumption. Wealth effects on consumption are relatively small as households seek to balance wealth accumulation and lifetime expenditures. Accordingly, this analysis sets out to document the changes in wealth as measured in the expected changes in residential housing values but makes no assumptions on changes in household purchasing behavior because of such wealth effects. Second, public revenues for local government units largely rely on property taxes levied based on the value of the community's underlying properties. Accordingly, a change in property values will have direct implications for government revenues necessary to support public services like the emergency services, local schools, parks, and others. Therefore, in addition to projecting changes in regional wealth, the property analysis will also project expected impacts on public revenues through residential property taxation.

Webber Dam

To provide valuable context for the economic impact analysis results, this section includes a high-level overview of the dam, as well as some general and site-specific information about the short-term environmental context in the event of partial or full dam removal under the study's assumptions.

Background

Webber Dam is the tallest dam on the Grand River and the only Consumers-operated dam on the river. Located about six miles north of Portland in Ionia County, Webber Dam was completed in 1907. The dam is about 30 feet high and 1,200 feet long, with a capacity of 3.25 megawatts. The average output is 1.3 megawatts per day, the smallest of Consumers 13 hydroelectric dams. The 660-acre impoundment is not officially named.

Environmental Context

While no decision has been made on the Webber Dam's future, it is important to understand the short-term environmental context. With dam impoundment projects involving significant dewatering, there is a length of time where the exposed bottomlands (previously impounded sediments) need to dry out. This process usually completes itself during the construction phase of a project as the impoundment is lowered. Currently, there is no indication that the sediments within the 13 river hydros have an abnormal propensity to hold moisture. For the purposes of high-level environmental assessments, it is assumed that the impounded sediments have dried to the extent possible within the construction time frame, typically within the first six to nine months of the project. For all 13 impoundments, the first year after construction will largely consist of the progression of raw, recently disturbed soils to increased vegetation growth.

Where hydrologic conditions persist over time, wetlands will form. This will likely occur near and along tributaries, following the tributary's path to the point where it joins the mainstem of the restored channel, near groundwater seeps occurring along valley walls or high groundwater tables, and in the floodplain areas of the restored main channel. Generally, former dam impoundments will form a mix of wetland and upland ecosystems. The exact locations of these are largely determined by the site-specific hydrologic conditions of the soils and final topographic surface after partial or full dam removal.

The historic Webber Dam impoundment survey lacks detail related to habitat types of the former bottomland. Based on the MNFI wetland viewer and the restored river channel alignment, some wetlands will likely form on the inside bends of the restored channel. There are also two areas where wetlands could potentially reach from the restored channel to the eastern extent of the current impoundment. The MNFI wetland viewer identified wetlands or wetland characteristics in these two areas, signifying the likelihood for wetland formation along the impoundment edge propagating toward the restored river channel. Depending on the final topographic surface of the remainder of the impoundment, upland land type could be expected to form in the rest of the impoundment.

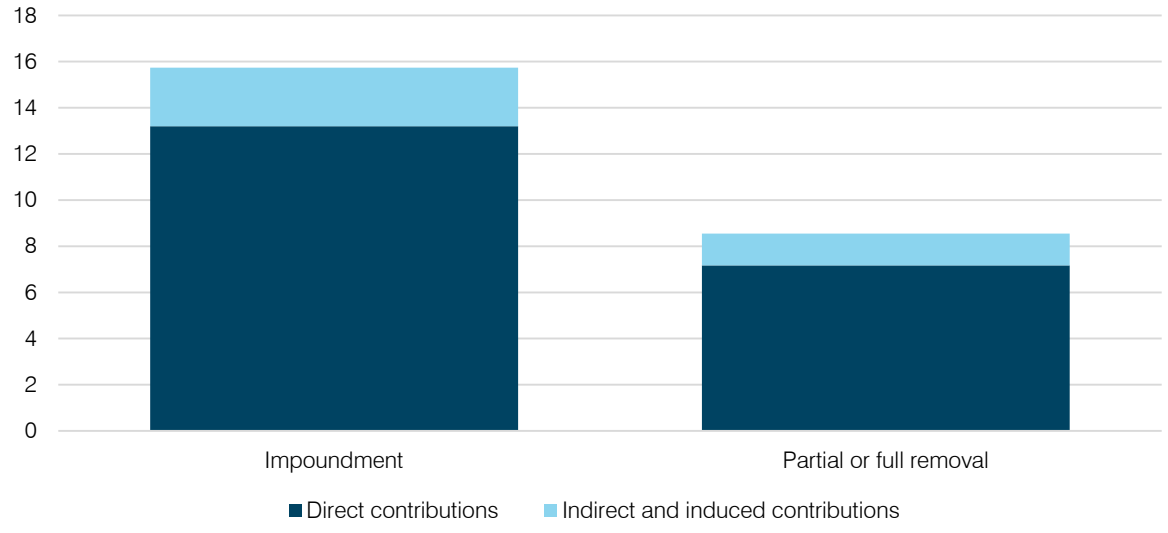
Economic Impact Analysis

To assess existing recreation-related activity for the economic contribution study, PSC spoke with local government officials, recreational asset managers, and other community stakeholders to identify existing reports and collect data on the number and types of visitors of the recreational facilities surrounding the pond. Where data were not available from local sources, PSC used a cell phone data mapping service to estimate annual users. PSC then applied nationally recognized, inflation-adjusted recreation expenditure profiles to these trip counts to create the inputs for the IMPLAN analysis.

Recreational Analysis

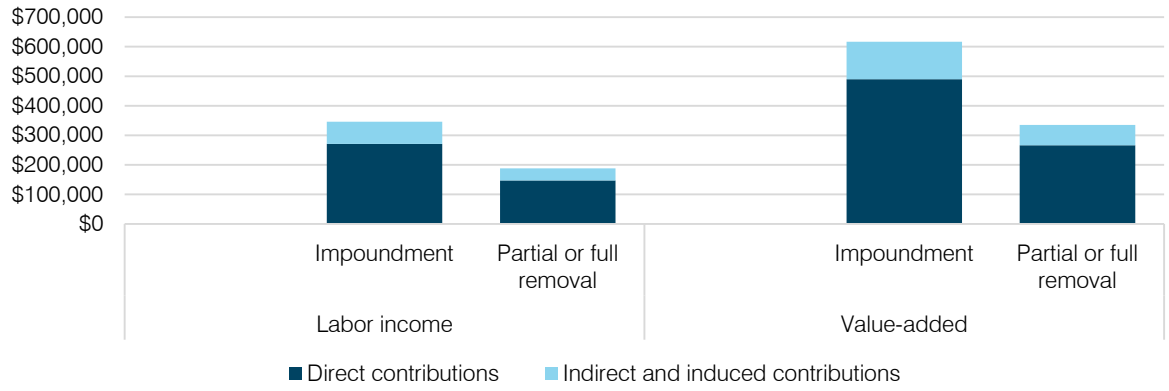
After applying the approach outlined in the methodology section of this report, adjusted site visitation estimates were applied to the same expenditure profiles used for the economic contribution analysis. The IMPLAN results under these assumptions were then compared to the previous economic contribution results to determine the economic impact of dam removal. After reviewing maps of the area, PSC conducted a single analysis of the full removal scenario because there was not a meaningful difference between the full and partial removal scenarios. Using IMPLAN and data collected from local and state sources, this analysis estimates the short-term economic impact of the full removal of the Webber Dam. The short-term estimated effects documented in this report are intended to reflect the economic impacts during the first year following dam removal. The extent to which they persist over time will depend on how quickly the local economy changes to accommodate the new economic environment. PSC estimates that in the first year after dam removal, recreational activity in the area surrounding the impoundment would result in 7 fewer jobs in the region and a $281,817 reduction in value-added to the local economy (Exhibits 5 and 6).

EXHIBIT 5. Employment Results—Impoundment and Partial or Full Removal



Source: PSC analysis

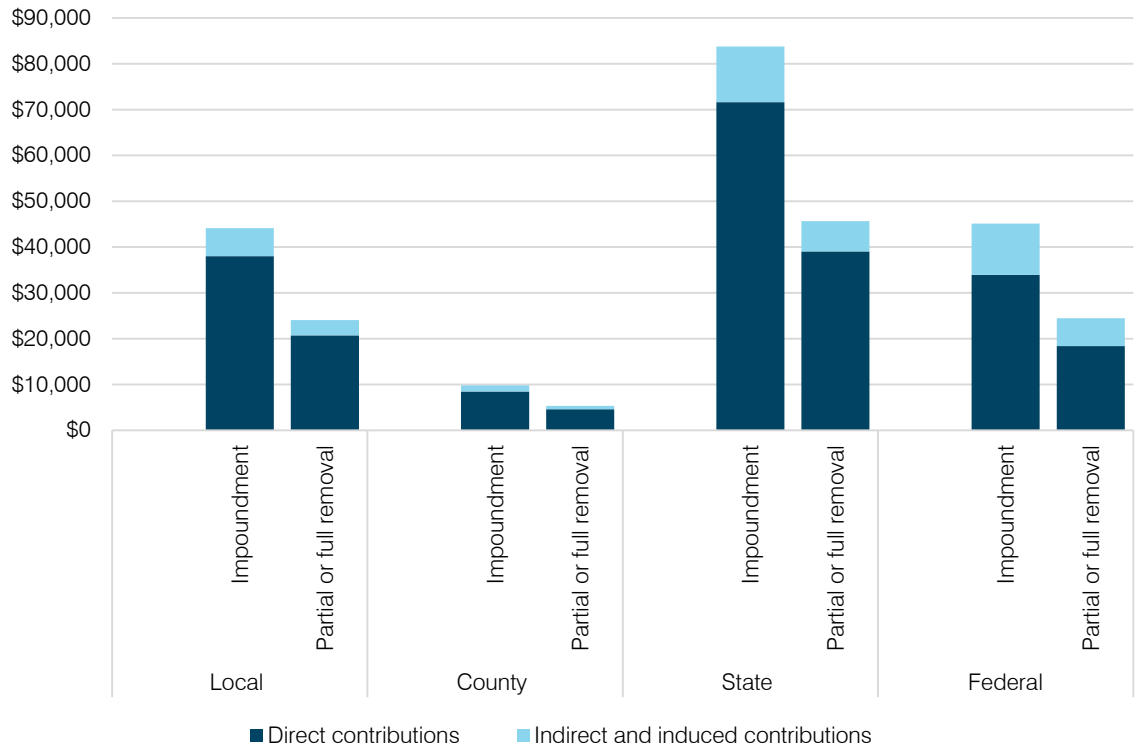
EXHIBIT 6. Labor Income and Value-added Impacts—Impoundment and Partial or Full Removal



Source: PSC analysis

These estimated shifts in recreational activity will also result in $83,332 fewer contributions in total annual tax revenue, with $62,672 of that reduction at the local, county, and state levels (Exhibit 3).

EXHIBIT 7. Tax Impacts— Impoundment and Partial or Full Removal



Source: PSC analysis

Discussion

Short- versus Long-term Shifts in Economic Activity Following Partial or Full Dam Removal

Though this analysis focuses on short-term reductions in economic activity, studies show recreational activity and spending can recover and even outpace impoundment spending in the long term (Loomis 2002). Capital investments and other supports to help recreational assets shift to serving river-based activities could mitigate losses and maximize opportunity. Also, some studies indicate that a return to river creates opportunities for more access points, which can increase the economic contributions of river-based recreational activity (Bi, Borisova, and Hodges 2019).

At a regional or state level, the jobs and spending measured in this analysis are unlikely to be lost, given that those partial to the activities most impacted by dam removal (e.g., pontoon boaters, lakeside camping, water skiers, etc.) are likely to find another place in the state to do these activities (Bi, Borisova, and Hodges 2019). However, at the local level, unless these activities are conducted elsewhere in the immediate area—which is not assumed in this analysis—the reduction in visitor trips and spending will have economic impacts.

Partial and Full Removal Considerations

For all economic impact reports, PSC considered both full and partial removal scenarios, but in some cases, including at the unnamed Webber Dam impoundment, it appears that the shifts in recreational activity associated with the water levels under a partial removal would not produce significantly different outcomes. While it is possible, if unlikely, that the economic impacts of a partial removal would be different from those following a full removal, those differences would not be measurable when making the assumptions and developing the approach necessary to model these shifts. For this reason, PSC did not conduct a separate analysis of what the impacts would be under a partial removal scenario.

Other Potential Impacts Not Measured

Angler Activity

As noted in the methodology section of the report, PSC did not estimate the changes partial or full dam removal will have on angler activity and the associated economic effects of those activities. However, there is sufficient research to suggest that dam removals generate significantly positive benefits to anglers and restore fisheries to their normal habitat. A recent long-term effect study following the removal of the Edwards Dam along the Kennebec River, showed greater overall angler satisfaction with fishing endeavors along the Kennebec (Robbins and Lewis 2008). Both willingness to pay to fish and actual fishing-related expenditures increased after dam removal. While McKean et al. (2010) support the finding that anglers' willingness to pay increases and their actual expenditures for fishing increase after dam removal, they found that the expenditure effects may be partially mitigated by lower visitor counts. Regardless, the net effect observed was a net increase in regional economic growth around angler activities. These long-term studies observe effects well after a new normal life cycle exists in the river system and that transition can take years.

Other mitigating circumstances should also be considered. For example, not all anglers prefer river fishing, as many seek deeper water fishing activities via boat rather than bank and/or fly fishing in cold spring waters. That is, the net effect on fishing activity may have as much to do with the preferences of recreational anglers as it does on the river ecosystem. Supply and demand dynamics are also important to consider, as changes that increase the costs of fishing activities may result in a decrease in visitor fishing

trips (Hwang et al. 2020). If lowermost dams are removed, a seasonal barrier may be needed to prevent movement of the invasive sea lamprey upstream. Such barriers could also hamper natural fisheries restoration, which may or may not have long-term implications on angler activities along the river.

Ecosystem Services

Nature provides vital contributions to economic and social well-being that are often not traded in markets or fully considered in land use, business, and other economic decisions. Ecosystem services are direct and indirect benefits to people from nature and are often not priced because they are not traded, and often are difficult to observe. In the case of a river, these contributions include water cycling and purification; mitigating or propagating flood events; the support of habitat for diverse populations of birds, fish, and mammals; carbon sequestration; and cultural and aesthetic benefits, to name a few. Consider one known ecosystem disturbance by dams. Many of Michigan's fish populations prefer coldwater environments that are generally supported by spring water. Michigan's low water table produces multitudes of springs–groundwater that flows naturally to the water surface due to features of the water table and surface topography. Within a water system, impoundments result in warming river water, even downstream from the dam. Cold spring water that does intermingle with lake water gets diluted into the warmer water system to the detriment of natural habitat for cold water fish like salmon, trout and sculpins.

While research and literature on ecosystem services abound, PSC has not estimated the impacts of the presence or absence of the river hydros on ecosystem services because the scope of measurement is beyond the existing scope of work. Research articles highlight the challenge of quantifying the values of ecosystems of nonmarket goods and services, including recreational activity (de Groot et al. 2012; Steinman et al. 2017). Also, while decisions that affect these services are often made at the local level, "issues such as fisheries and water levels require sustainable management at the basin scale, where coordination, valuation, and assessment may face greater logistical challenges" (de Groot et al. 2012).

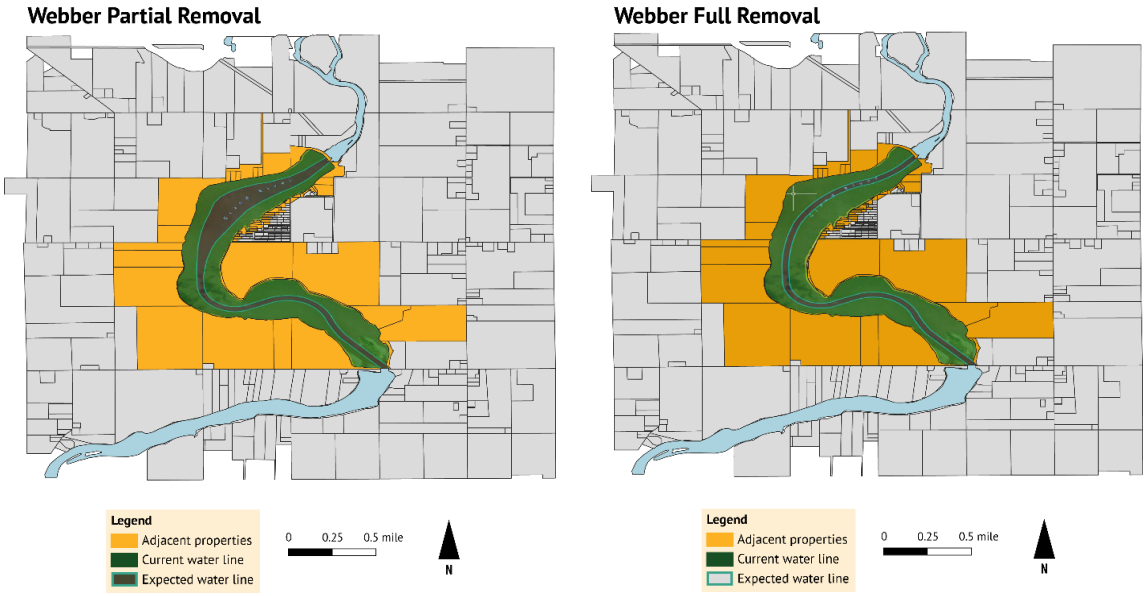
Property Value Analysis

The Webber Dam impoundment has 76 adjacent residential lots that likely benefit from access to the current impoundment. To what extent residential property values would be affected by a partial or full dam removal depends on a property's proximity to the resulting water's edge. This is because relative to a full dam removal, a partial removal retains a small impoundment that extends the water's edge to more properties. Exhibit 8 shows two maps of property plats around the Webber Dam impoundment, one depicting the extent of the expected water line under a partial dam removal and one showing the same under a full dam removal. The expected extant of the water body after dam modification is shown by the green and blue insert. All other points along the river system are assumed to be invariant between the two scenarios and from the current relationship with the water system.

PSC determined the potential net change in property values and associated annual property tax impact of the proposed dam modifications. These are highlighted in Exhibit 9. Accordingly, the relatively smaller impoundment expected with a partial dam removal will provide waterfront access to more properties than under a full removal. Because more lots will have greater water proximity than with full removal, the partial-removal scenario would be expected to have a lesser overall negative effect on overall residential property values and annual residential property tax revenues. Because there are residential properties differentially impacted by the partial and full dam removal scenarios, this assessment anticipates that the partial and full dam removal scenarios will have measurable differences in effects. As indicated in Exhibit

9, 76 impoundment-adjacent properties will experience a cumulative reduction in market values of around $973,032 under a partial dam removal and $1,100,116 under a full dam removal. Similarly, annual residential property tax revenues are expected to decrease by about $8,794 and $9,943 under the partial and full removal scenarios, respectively.

EXHIBIT 8. Partial and Full Removal Parcel Analysis



The results of PSC analysis on the potential net change in property values and associated annual property tax impact are highlighted in Exhibit 9.

EXHIBIT 9. Property Analysis Results

	Partial or Full Removal
Number of Properties Analyzed	76
Expected Net Property Value Impacts	
Assessed value	-$550,058
Market value[3]	-$1,100,116
Expected Net Property Tax Revenue Impacts[4]	
Taxable value	-$292,109
Tax revenues	-$9,943
Average millage	34.038

Sources: Iona County Equalization Department; PSC analysis

[3] Estimated wealth effects are the change in the expected market value, which is calculated as two times the assessed values.

[4] Taxable value, along with the effective millage rate, determines the expected changes in annual property tax revenues.

Conclusion

Building on previous community engagement and economic contribution work conducted by PSC, this report is intended to provide insights on the potential economic and property impacts of partial or full removal of the Webber Dam. Given the levels of uncertainty present with any potential removal project, PSC made several key assumptions, which are discussed in more detail within the report's methodology section. These include analyzing the potential impacts in the first year after partial or full dam removal and not make any assumptions about new recreational activities or facilities that could increase visitation following regional planning and investment efforts.

Under this set of assumptions, local recreational assets are likely to be significantly impacted in a partial or full dam removal scenario. Shifts in visitation activity will affect employment opportunities, tax revenue, and economic contributions to the broader economy. PSC research suggests that over the long term, recreational activity is likely to return.

This report includes a full breakdown of the potential economic impacts of the partial or full removal of the Webber Dam, which includes:

- A reduction of $281,817 in gross regional product and 7 jobs
- A reduction of $83,332 in local, county, state, and federal taxes through direct, indirect, and induced tax effects from recreational spending

The partial or full removal of the dam will also impact adjacent property values, contributing:

- A reduction of $1.1 million in market value to adjacent properties
- A reduction in $9,943 in local and state property tax revenue due to the decreased market value

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Appendix A: Methodology

IMPLAN Modeling

To analyze the amount of money visitors and residents spend on recreation related to the dam impoundments, Public Sector Consultants used IMpact for PLANning (IMPLAN), an input-output model to estimate economic impacts and contributions. It is a staple for regional economic analysts.

Economic Impact and Contribution Analyses

There are two major frameworks for input-output simulations. The first is an economic impact analysis, which examines the effect of something that affects the economy—like changes in wages or jobs—in a specific area. In this case, it is the dam impoundment and the recreational activities and expenditures associated with it. Because an economic impact analysis provides a model of what the economy is like with the economic feature being examined—in this case, the dam impoundment—a full accounting of what the economy would be like without the feature is required in modeling the outcomes.

The second framework is called an economic contribution analysis. This framework does not consider the possible absence of an economic feature. It only models the value of economic activity that can trace its source back to the existence of the economic feature being modeled.

IMPLAN Terminology and Methodology

Input-output models trace transactions among and between different economic sectors (like households, businesses, and governments) over the course of a year. Tracing these transactions offers a clearer picture of how a change in economic activity in one part of the economy creates changes in other parts of the economy. When a business sells from inventory, it takes a portion of those earnings to pay for other goods and services (for example, to restock its inventory). Some of the wages companies pay to employees will go to local retailers and service providers, continuing the ripple effect throughout the economy. Because of all of these additional transactions, the overall economic effect is greater than the value of all the different direct revenue streams (employer to employee, consumer to business, business to business, etc.), which is called the multiplier effect. The existence of multiplier effects in regional and national economies is well documented in economics literature (Coughlin and Mandelbaum 1991).

Direct Effects

The standard approach to modeling economic impacts with input-output models is to begin by establishing the value of transactions that represent direct expenditures related to the dam and impoundment. For the purposes of this study, these are expenditures by individuals utilizing impoundment, feeder river system, and other adjacent recreational facilities. The direct effects of this spending are organized into various commodity categories. Each commodity type, such as grocery retailing, gasoline, and restaurant meals, have unique economic profiles in the local economy. For example, purchases made at a local grocery store create a different set of secondary transactions than purchases made in other industries.

While recreational expenditures make up the direct effects, they are largely derived from the number of recreational users at facilities around the impoundment. As discussed above, the analysis assumes that these users will spend money in a particular pattern while visiting recreational assets in and around the

dam impoundment. The expenditure profile used for this analysis is an inflation-adjusted version of the one adopted by the United States Department of Agriculture and United States Forest Service (USDA/USFS) (White 2017). Expenditures by recreational users are measured on a per-party basis. To account for the different spending patterns of impound visitor types, party counts were broken out into distinct categories.

Indirect and Induced Effects

These direct effects are then used to estimate the secondary transactions that happen because of the direct effects. The first set of secondary transactions is the indirect effects, which are transactions between business sectors. Indirect effects are the intermediate purchases of goods from one business by another (such as restocking). A business's operational costs—like electricity, rent, and business services—are also indirect effects. Indirect effects ripple throughout the economy as businesses purchase goods and services from other businesses. These transactions cascade throughout the region, reduced only by the extent that inputs are purchased from suppliers outside the region. The second set of secondary transactions are called induced effects. Induced effects measure the value of new transactions by households, governments, and other institutions in response to higher labor income, taxes, and profits. These household and institutional expenditures from earnings generate new rounds of business-to-business transactions and associated payments to institutions. These expenditures continue throughout the regional economy, hampered only by the extent to which purchases are made for goods, services, and payments to institutions outside the local economy. The direct, indirect, and induced effects are summed together to calculate the total economic effects.

Contribution estimates start with the estimated total value of purchases by category. Standard input-output models examine the economy through the flow of transactions. However, figures for employment, labor income, and total regional income, which are also known as contributions to gross state product, are determined with fixed ratios to the value of sales transactions. For instance, if Industry X employs one employee for every $1 million in sales, then an increase in sales by $10 million translates into an increase in employment by ten workers. Similar fixed ratios for labor income and gross state product apply. The IMPLAN model provides 544 expenditure categories, and 11 household types by income group.

Property Value Analysis

Estimating the expected impact of removing or reducing the impoundment on residential property values relied on a long literature of academic studies on this topic. Most studies underlying this literature apply some form of Hedonic regression analysis to estimate the value of proximity to the water feature. For this analysis, water features entail lake/impoundments and rivers, where the contrasts in value contributions across the two provide a basis for understanding how the values of properties that are currently impoundment-adjacent will change once becoming river/stream adjacent.

Hedonic analysis assumes that the water feature, whether an impoundment/lake or stream/river, has some amenity value to adjacent homeowners that will be reflected in the property values. If proximity to the water feature is deemed desirable, those properties adjacent to the water will tend to command a higher market value than identical properties (comparable properties) that are not proximal to the feature. Accordingly, Hedonic analysis generates valuations of comparable properties statistically. These statistically derived baseline valuations can be compared to properties adjacent to water features for estimating the average or expected impact of the water feature to comparable properties.

This economic impact assessment of the effect of removing the impoundment on property values will use a benefit transfer method (Johnston and Rosenberger 2010). Relative to a site-specific specific study, which would use location-specific property data for developing a model that estimates the water feature's (whether impoundment or lake) contribution to property values, a benefit transfer approach applies a model of the relationship from another study site and applies that model to the site in question, usually called the policy site.

The benefits of this type of approach are that the underlying model representing the value contributions are often much more robust than can be attained from a site-specific study. Many reasons exist. First, inclusive studies of property value impacts of natural amenities are expensive to undertake and require significant time investment to collect the relevant property data. This project's budget and timeline over thirteen impoundments preclude such inclusive, site-specific studies. Second, the study area data is not uniformly sufficient for undertaking comprehensive hedonic analyses. Candidate study sites are those with significant counts and varieties of both effected and baseline housing units by which property values can be compared. The sites should also have comprehensive measures across each housing unit, like year built, square footage, age of last updates/mechanicals, number of rooms and baths, lot size, and other measures common in describing residential properties. That is, the valuations from published study sites are derived from ideal conditions that often do not exist in sites of interest and can therefore provide generalizable estimates of the relationship between residential property values and proximity to water features. However, benefit transfer applications have a shortcoming in that its application may bias the predicted contribution if the study site characteristics are sufficiently unmatched by the policy site.

In estimating effects, it is important to be able to apply unit-free measures, like percent change in values from baselines rather than absolute dollar values. Such unit-free measures allow for transference of values when value scales differ between the study and the policy sites. For example, a study that establishes that proximity to a river feature elevates property values by $8,000 on average is more significant if the baseline property values are $100,000 than if they are $200,000. Alternatively, a finding that shows proximity to a river elevates property valuations by 8 percent is fully scalable and applicable if the baseline property values are $100,000 or $200,000.

Accordingly, an inclusive review of existing hedonic studies of the effects of water features on residential property values was referenced to identify relevant studies for consideration in the benefit transfer estimates. Sarah Nicholls and John Crompton's 2018 article in the academic journal *Lakes & Reservoirs* is a comprehensive review of existing studies on the effects of lakes, lake water drawdowns and rivers on property values. The review shows a great deal of consistency in generalized findings, that adjacency to lakes or impoundments tends to be associated with increased market values of residential properties, even when controlling for other property amenities, like square footage, number of rooms, lot size, etc. Multiple studies suggest that adjacency to any water feature tends to be associated with higher residential property values, but that the effect is larger for lake adjacency than for that of rivers. Studies comparing residential property values before and after a permanent impoundment drawdown reinforce the valuation effect differences between lakes/impoundments and rivers/streams. However, the effect decreases with distance between properties and the water feature. The model should consider these three stylized findings.

Key papers that influenced the adopted model of residential property effects include studies that show a clear positive effect of water adjacency and views to water features, as well as a study that found no effect of water adjacency on property values. Additionally, studies used were geographically diverse. Boodt

(1978) compared property values surrounding five Oregon lakes against baselines finding both significant and insignificant effects, but an overall average positive effect of a 15 percent boost in residential property values for those lots adjacent to lakes or reservoirs. A study of Northern California properties (Kruse and Ahmann 2009) generated significantly more prolific estimates of the effects of adjacency to water bodies, showing that adjacency boosted property values by over 100 percent relative to comparable baseline properties. This study also shows the effect of unobstructed scenic views of water bodies alone contributes about 28 percent boost in property values. Varying geography, one study (Muller 2009) controlled for the presence or absence of reservoir management with proximity and views of reservoirs in Indiana and Connecticut, determining that proximity to or views of water bodies is not sufficient to assure a positive effect of lake proximity to residential lot values. Once the valuation of water views has been incorporated into property value estimates, the effect of adjacency on property values moderates (Espey et al. 2007; Sander and Polasky 2009), suggesting that the visual vista is a key component of the value homebuyers place on lake adjacency. For this assessment, the expected premium associated with reservoir adjacency is set to 37 percent, which is on the lower spectrum of estimates. The lower, more conservative estimate is applied because the loss of lake adjacency will be replaced by adjacency to the restored river.

A few studies in the review (Conner 1973; Sander and Polasky 2009, Tapsuwan 2015) compared the valuation boost to residential properties between adjacency to lakes and rivers, noting that the estimated effect of river adjacency is slightly less than one-half that of a reservoir. The general rule under the modeling scenarios is that with a full dam removal, all lake adjacent properties will lose the lake premium. After dam removal, those properties that remain adjacent to the river will benefit from the lesser river premium that will partially offset the lost lake adjacency premium.

Finally, several studies (Brown and Pollakowski 1977; Doss and Taff 1996; Mahan, Polasky et al. 2000; Sander, Polasky et al. 2010; Stetler, Venn et al. 2010) observed that distance from the water line tends to be associated with lower water adjacency premiums. Though the estimates varied by study, the findings tended toward centering on a.045 percent decrease in the overall adjacent property value per ten yards of distance from the water's edge.

Accordingly, the following model is applied to both assessed and taxable values to gauge the expected net effect of partial and full removal of the respective dam.

$$((PropValue_{n,s}) / (1 + .3696 * front_s)) \ * \ (1 + .1512 * river_s) \ * \ (1 - .00038 * \ yards_s)$$

The variable PropValue takes the value of n = {Assessed Value or Taxable Value} for scenario s = {Full Removal or Partial Removal}, where the scenario dictates whether water frontage is lost ($front = 1$), whether the property will retain adjacency to the river ($river = 1$) and the distance in yards the property's edge from the water front ($yards$). Because the same model is applied to taxable and assessed value, the model implicitly assumes that taxable, assessed, and market values move in proportion to the others.



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Planning for Prosperity in River Hydro Communities

Community and Stakeholder Priorities to Inform Long-Term Planning

December 2024

PSC



PUBLIC SECTOR CONSULTANTS

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Table of Contents

TABLE OF CONTENTS 3
EXECUTIVE SUMMARY 4
INTRODUCTION 6
Community Engagement Calendar 2022–2024 7
PROSPERITY GROUPS 9
Purpose and Activities 9
Summary of the Work 11
Potential Risks 12
NEXT STEPS 14
PROSPERITY GROUP PRIORITIES 15
Au Sable River 15
Mio Dam 15
Alcona Dam 20
Lower Au Sable: Cooke, Foote, Loud, and Five Channels Dams 25
Grand River 31
Webber Dam 31
Kalamazoo River 36
Calkins Bridge Dam 36
Manistee River 44
Hodenpyl Dam 44
Tippy Dam 51
Muskegon River 59
Rogers Dam 59
Hardy Dam 66
Croton Dam 71

Executive Summary

Consumers Energy engaged Public Sector Consultants (PSC) to meaningfully involve community representatives and interested parties in the discussions about the company's river hydroelectric plants (river hydros) for the third year since announcing its long-term hydro strategy. PSC lead development of seven community stakeholder groups tasked with generating their ideas of community prosperity under three different scenarios for the river hydros—whether the river hydro is relicensed, sold, or decommissioned—and in so doing, provide counsel to the company. Guided by facilitators, prosperity group members provided their perspectives and honed their recommendations for the different scenarios in multiple meetings convened between April and November 2024.

The framing questions used to shape the prosperity groups' feedback for each of the three possible scenarios is listed below.

1. **Relicensing—**How would the prosperity group like Consumers Energy to build a community benefits package in the next relicensing period?
2. **Sale—**What would the prosperity group like Consumers Energy to ask for on behalf of the community should a sale occur?
3. **Decommissioning—**What are the key investments the prosperity group would like Consumers Energy to make to support the long-term prosperity of the community post-impoundment?

Through various group and individual exercises, facilitated discussions, and presentations on topics such as rural economic development, dam removal and river restoration, and fisheries and wildlife, group members identified priorities for each scenario along with key actions and launch steps. These priorities are being shared with Consumers Energy, which will take them under advisement as the company considers its long-term strategy for the river hydro fleet.

Each prosperity group and river hydro are unique, yet several themes emerged across them as community prosperity summaries were developed.

- The health of local fisheries on all five rivers (Au Sable, Grand, Kalamazoo, Manistee, and Muskegon) is a priority for environmental and economic reasons.
- In most river hydro communities, the river hydros play an outsized role in local economies as significant land areas are federally or state owned and/or in agricultural use.
- Outdoor recreation that attracts residents and visitors is a major source of revenue for rural economies where the river hydros are located, which is an asset that could also lead to overdependence on a single sector.
- Whether Consumers Energy or a new entity owns the river hydros, group members voiced concern about viable maintenance of the facilities if FERC granted another license, given changing energy markets and impacts from climate change.
- Groups also question the ability of a new owner to safely maintain the river hydros.
- In the event of decommissioning and removal, creating a land management strategy was consistently identified as a means for tackling issues such as use and ownership of previously submerged land, recreation opportunities, and sediment management.
- Groups stated the need for better promotion and marketing of these regions for tourism and business attraction.

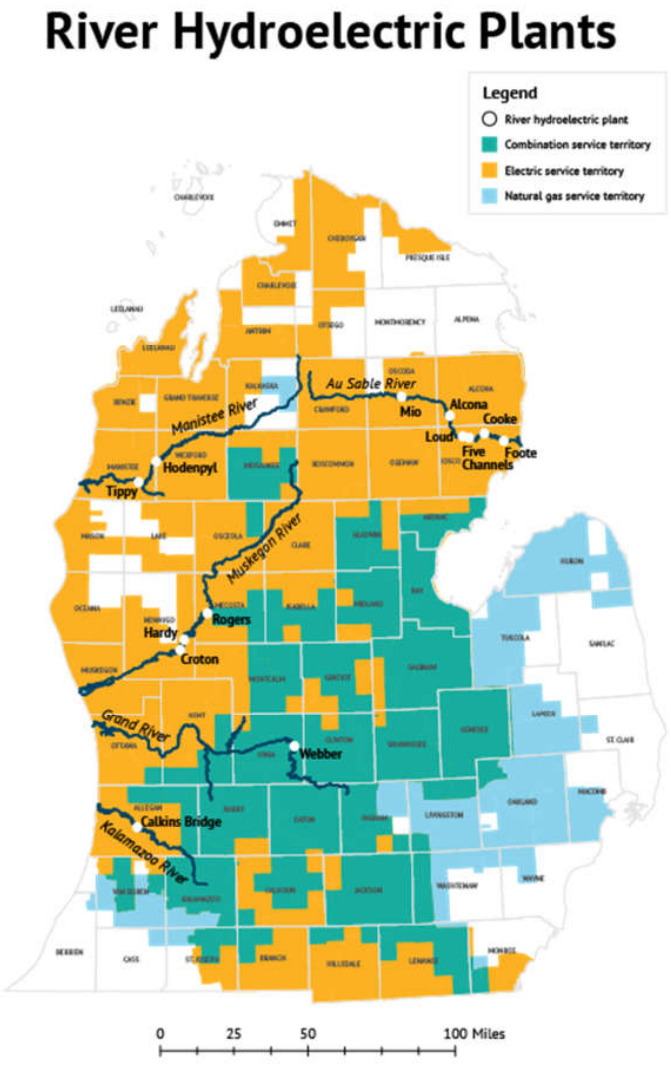
- Groups also identified strategic investment in outdoor recreation and access to land and water opportunities.

The river hydro communities and other key stakeholders are engaged and ready for the next step, whatever it may be—provided Consumers Energy keeps them engaged and current in a timely, transparent process.

Introduction

For more than a century, Consumers Energy has owned and operated river hydroelectric plants to generate electricity. Today, only 13 river hydros remain in their fleet, and most of them have Federal Energy Regulatory Commission (FERC) operating licenses that expire within the next decade (Exhibit 1). The company, as the owner and licensee, must file with the FERC a notice of intent to apply for a new license at least five years before the existing license expires. So, in 2022, Consumers Energy began a detailed review of its river hydro operations to understand the financial, societal, and environmental impact of the three options available to them: pursue relicensing of the river hydros; decommission and remove the river hydros; or to sell the river hydros and transfer the licenses to a new buyer.

EXHIBIT 1. Map of River Hydro Plants with Rivers, Key Place Names, and Consumers Energy Service Areas



Consumers Energy and PSC hosted public meetings in each of the 13 river hydro communities in 2022 and again in 2023 to share information with residents about Consumers Energy's hydro fleet, the FERC license process and timelines, answer questions, and receive concerns. Materials produced as part of that outreach are available for download at The Future of Hydroelectric in Michigan website.

In 2024, Consumers Energy and PSC supported the formation of prosperity groups for each river hydro community composed of diverse stakeholders and led by community-based conveners. Regardless of whether Consumers Energy decides to exit from or relicense their river hydro facilities, the company recognizes the economic contribution the dams and impoundments have created for these communities, and wants to understanding how it can be a partner in supporting community prosperity and demonstrating Consumers' long-term commitment to the communities. In creating groups for collaborative thought and action, Consumers seeks to build lasting relationships for local prosperity during and after it makes its decisions.

Community Engagement Calendar 2022–2024

Consumers Energy has consistently engaged river hydro–adjacent communities for the past three years, providing venues for discussion and information gathering. The dates and locations for public meetings and prosperity group meetings in the communities since 2022 are presented in Exhibit 2, arranged by river and river hydro. Two virtual meetings were offered in 2023, as well. Meeting materials are available for download on Consumers Energy's website.

EXHIBIT 2. Community Meetings by River and River Hydros from 2022 to 2024

River Hydro	2022 Public Meeting Date and Location	2023 Public Meeting Date and Location	2024 Prosperity Group Meeting Date and Location
Au Sable River			
Cooke	Sept. 28—Oscoda High School	Oct. 24—Oscoda High School	Apr. 15, June 25, Oct. 24—Warrior Pavilion, Oscoda Sept. 17—Alpena Community College, Oscoda Campus
Foote	Sept. 27—Oscoda High School		
Loud	Oct. 11—Eagle Pointe Plaza, Hale	Oct. 11—Oscoda High School	
Five Channels	Oct. 12—Eagle Pointe Plaza, Hale		
Alcona	Oct. 10—Eagle Ridge Golf Course, Glennie	Oct. 2—Eagle Ridge Golf Course, Glennie	Apr. 17, June 27, Sept. 11, Oct. 23—Glennie United Methodist Church, Glennie
Mio	Sept. 26—Mio Au Sable High School	Oct. 30—Mio Au Sable High School	Apr. 15, June 24, Sept. 18, Oct. 23—Big Creek Township Hall, Luzerne
Grand River			
Webber	Sept. 15—Muir Community Center	Sept. 27—Muir Community Center	Apr. 5, June 11—Muir Village Hall Sept. 10—Webber Dam, Lyons Oct. 8—USDA Service Center, Ionia

River Hydro	2022 Public Meeting Date and Location	2023 Public Meeting Date and Location	2024 Prosperity Group Meeting Date and Location
Kalamazoo River			
Calkins Bridge (Allegan)	Aug. 31—Allegan High School	Aug. 29—Allegan High School	Apr. 25, June 18, Aug. 28, Nov. 12—Allegan County Community Services Building, Allegan
Manistee River			
Hodenpyl	Oct. 5—Springville Township Community Center, Mesick	Nov. 13—Springville Township Community Center, Mesick	Apr. 8, June 3—Norman Township Hall, Wellston Sept. 5—Mesick Community Center, Mesick Oct. 28—Springville Township Community Center, Mesick
Tippy	Oct. 4—KND Schools, Brethren	Nov. 6—KND Schools, Brethren	
Muskegon River			
Rogers	Sept. 20—Mecosta Township Hall, Big Rapids	Oct. 16—Ferris State University, Big Rapids	Apr. 19—Mecosta Township Hall, Big Rapids June 6, Sept. 4, Nov. 1—Newaygo County Sportsman's Club, Newaygo
Croton	Sept. 8 —Newaygo High School	Sept. 18—Newaygo High School	
Hardy	Aug. 24—Newaygo High School		
Virtual Meetings		Sept. 12, Nov. 16	

Prosperity Groups

In 2024, Consumers Energy and PSC shifted focus from annual community meetings to engaging with a smaller, representative group of people and organizations on a quarterly basis for each of the river hydros. These groups were tasked with envisioning community prosperity with or without a river hydro (or dam) operated by Consumers Energy as part of the utility's long-term commitment to the communities. To accomplish this, local stakeholder groups, called prosperity groups, met throughout the year under the guidance and leadership of community-based conveners and PSC. The groups provided collaborative input and broad perspectives as they identified issues to be addressed in case of a dam relicensing, ownership change, and decommissioning and river restoration. In recognition of the interdependency of multiple river hydros on a shared river, the prosperity groups formed according to river systems.

The local conveners, Consumers Energy Community Affairs managers, and PSC developed participant lists to have diverse stakeholders (e.g., economic development, river or watershed groups, anglers, recreational users, local governments, tourism associations, and relevant state and federal agencies) that are representative of each community. Community Affairs managers participated as members and liaisons between the groups and company leadership. The conveners served as the local hosts and meeting facilitators; in some communities where local facilitators were unavailable, PSC played this role. Exhibit 3 shows the groups and their local conveners.

EXHIBIT 3. Prosperity Groups in 2024

Prosperity Groups	Local Convener
Mio	Big Creek Township Supervisor (with PSC)
Alcona	Curtis Township Supervisor (with PSC)
Cooke, Foote, Loud, and Five Channels	Iosco County Controller/Finance Director (with PSC)
Webber	Ionia Conservation District
Calkins Bridge	Outdoor Discovery Center (ODC) Network
Tippy and Hodenpyl	Alliance for Economic Success (AES)
Rogers, Croton, and Hardy	Omni Tech International

Purpose and Activities

The prosperity groups developed their communities' priorities for the three potential scenarios for the river hydros: Consumers Energy relicenses and continues operation, a new owner continues operation, or Consumers Energy pursues dam decommissioning and river restoration. The prosperity groups met four times in 2024 to identify their community assets in relation to the river hydros with the goal of delivering their priorities to Consumers Energy by the end of 2024.

Each group was tasked with delivering a set of ideas that Consumers Energy could support in three scenarios:

1. **Relicensing**—How would the prosperity group like Consumers Energy to build a community benefits package in the next relicensing period?
2. **Sale**—What would the prosperity group like Consumers Energy to ask for on behalf of the community should a sale occur?

3. **Decommissioning**—What are the key investments the prosperity group would like Consumers Energy to make to support the long-term prosperity of the community post-impoundment?

The groups began meeting in April 2024 and are positioned to continue meeting through completion of exiting (either through sale or decommissioning) or relicensing. They met in person to learn more about the many issues inherent to each scenario, discuss their concerns and questions among their groups and in conversation with Consumers Energy, and respond to specific questions for each meeting. Exhibit 4 presents the meetings' workflow. Additionally, at each meeting, Consumers Energy representatives provided updates germane to the river hydros, answered questions from group members, and participated in the groups as a stakeholder.

EXHIBIT 4. Workflow for Prosperity Group Planning in 2024

MEETING ONE Community Strengths/Assets	MEETING TWO Opportunities	MEETING THREE Results	MEETING FOUR Setting Priorities	Deliverables
Focus Question What are the existing strengths/assets in the community?	Focus Question Which strengths/assets can we build upon with the dam? Without the dam? *Optional:* Content area expert presentation	Focus Question What is Consumers Energy's role in helping us reach our community's aspirations? *Optional:* Content area expert presentation	Focus Question How will we reach our community's aspirations? *Optional:* Content area expert presentation	Values Statements for Three Scenarios • Removal • Relicensing • Sale

During the first meeting, the prosperity groups completed two items. The first was a community asset mapping activity to identify the community's existing strengths and assets. The second was a survey to determine knowledge gaps of the groups. Subsequently, content area experts were invited to present at meetings based on the survey results.

During the second meetings, the groups identified community opportunities and assets to leverage if the dam is relicensed and if the river was undammed. The results of the community asset mapping activity from the first meeting served as the starting point for identifying opportunities. Groups also began inviting content area experts to build the group's knowledge and understanding of specific topics.

The groups identified ways to strengthen community prosperity under the three scenarios (relicense, removal, and sale) during the third meetings as well as key actions and resources needed to support those ideas. As part of the activity, group members answered the focus question, "What is Consumers Energy's role in helping us reach our community's aspirations?" In addition, the groups continued hearing from content area experts during the meetings.

In the fourth and final meetings of 2024, the groups completed their community prosperity plan begun during the previous meeting and refined their ideas in response to the focus question, "How will we reach

our community's aspirations?" While some groups continued to build their understanding of specific topics by hearing from content area experts, all groups were intent on organizing their ideas or priorities into scenario-planning tables that PSC could include in its report to Consumers Energy.

Summary of the Work

Detailed summaries of the work of each prosperity group are provided below, but there were several overarching themes that arose across the seven groups.

Theme One: Health of the Local Fisheries

Group members shared their perspectives on local fisheries conditions with and without river hydros. In the scenario where the river hydros continue operations, some people stated that they value the existing fisheries found above the river hydros, where impounded waters host species adapted to that environment. Other respondents expressed concerns that native species will struggle to survive and thrive without free-flowing rivers. In the scenario where the river hydros are removed, some group members expressed concerns with no longer fishing lake-like waters. Some participants stated they were concerned that river hydro removal will mobilize contaminated sediments and other pollutants and thus harm fisheries. In the scenario where the river hydros are sold, group members voiced concerns that a new owner may not prioritize the health of the fisheries even to the extent that Consumers Energy does.

Theme Two: River Hydros Play an Outsized Role in Local Economies

Most of Consumers Energy's 13 river hydros are in rural areas with limited economic diversification. Over the past century since the river hydros' construction, communities, businesses, and school districts have grown alongside and in response to them. Prosperity groups discussed the outsized role the river hydros have on their local economies where large impoundments provide lake-like recreation for residents and visitors, support small businesses related to recreation, may augment real estate valuations, and impact the number of school-age youth served by the school districts.

Theme Three: Dependence on Outdoor Recreation for Rural Economies

Prosperity group members identified natural resources, scenery, and outdoor recreation opportunities as top community assets. Those assets contribute to a pride of place, sense of community, and sources of income and economic activity from year-round outdoor recreation. Natural assets—including forests, wildlife, waterways, lakes, and scenic views—bring tourists to the communities and drive rural economies.

Theme Four: Viability of Maintaining the River Hydros for Another FERC License Period

Group members understand Consumers Energy's challenges related to continued river hydro maintenance and operation as federal licensing requirements increase. Consumers Energy has been transparent about the costs to safely operate and maintain the river hydros, upcoming maintenance needs, and expectation for new requirements from FERC that likely will increase costs. Members frequently stated that the company or a new owner would need to have the ability and finances to maintain the river hydros for another 30- or 40-year license period.

Theme Five: Uncertainty About a New Owner's Ability to Safely Maintain the River Hydros

Prosperity groups expressed consternation about the possibility of a new owner purchasing the river hydros. While Consumers Energy has a longstanding presence in the communities as the primary energy

utility and has existing relationships with group members, so much is unknown about a potential new owner or owners. Generally, Consumers Energy is viewed as a trusted partner that shares many residents' priorities for the communities. Participants stated their uncertainties about the intentions of a new owner of the river hydros and concerns that they will have little leverage to advocate for community priorities.

Theme Six: Land Management Strategy if the River Hydros Are Removed

If the river hydros are removed, who would own previously submerged lands? What activities would be allowed on those lands? How would those lands be restored and managed? Can trails be moved or added to adjust to the new water elevation? Group members asked these questions and many more related to land use decisions that would need to be made if the river hydros were removed. Because of these uncertainties, the groups often identified the development of a land management strategy as an early step to take with Consumers Energy, should the decision be made to decommission and remove any river hydros.

Theme Seven: Better Promotion and Marketing of These Regions

By developing the prosperity groups and giving them space and structure to discuss their river hydro–related priorities, several themes and needs emerged such as the need for better promotion and marketing of the river hydro communities and regions. Most groups invited experts in economic development and rural prosperity into their meetings to provide information, resources, and supports as they move forward with the prosperity plans. Regional economic development organizations and the Michigan Office of Rural Prosperity were some of the entities tapped by participants for future community planning initiatives in response to changing demographics in rural Michigan. Marketing and promotion campaigns will flow from those efforts.

Theme Eight: More Investment in Outdoor Recreation

Regardless of the river hydros' fate, the groups prioritized expanding and improving outdoor recreation opportunities and thoughtfully increasing public access to rivers, impoundments, and other outdoor areas. Participants noted their communities will need to be resilient to the changing climate and adapt snowmobile trails so other trail users can benefit when snowfall is low. Planning, developing, and marketing nonmotorized water trails was identified as another opportunity that requires funding and other resources. Some groups prioritized maintaining and securing large undeveloped parcels for diverse wildlife habitat and outdoor recreation use.

Potential Risks

PSC identified several potential risks related to engagement activities for Consumers Energy's awareness as it considers the prosperity groups' work products in the context of the long-term river hydro strategy. Below are our suggested opportunities for Consumers Energy to mitigate the risks as it goes forward.

Risk One: Delayed Decision Making About the River Hydros

Consumers Energy announced to the prosperity groups it would announce decisions about the river hydros near the end of March 2025. Many prosperity group members said it was frustrating not having the information on a decision during the prosperity group meetings. If the decision is delayed much beyond the anticipated date, some key stakeholders, community members, and community leaders likely will respond acrimoniously and publicly.

Risk Two: Confusion About Who Has Decision-Making Responsibility

As owner and operator and FERC license holder, Consumers decides the river hydros' futures. Prosperity groups act in an advisory capacity to Consumers Energy. Nevertheless, group members frequently shared their preferred scenarios in meetings and in statements to Consumers Energy and to FERC. To mitigate this risk, Consumers Energy will need to continue clearly communicating expectations for the groups and that the decisions about the river hydros rest with the company.

Risk Three: Community and Key Stakeholder Disengagement

Even after three years of deep engagement with the river hydro communities, the need remains for Consumers Energy to continue building trust with the communities. Some prosperity group members declined to participate in all meetings, stating that they felt their perspectives would not be considered. The company should continue to be transparent and timely with sharing information about the river hydros and tailor methods of communication and messaging to specific groups. In addition, Consumers Energy regularly leads and participates in community-specific projects not connected to the river hydros; sharing news of such projects will provide them with a more holistic view of what the utility and its personnel do in and for residents. Company representatives should continue regularly meeting with elected and appointed community leaders to maintain open lines of communication about the river hydros and other utility-related matters.

Risk Four: Opaque Decision-Making Processes for River Hydro Relicensing, Sale, or Decommissioning

Regardless of Consumers Energy's decisions regarding the river hydros, the company will need to demonstrate its commitment to transparency in presenting the decisions and the subsequent processes and time frames. Community and stakeholder representatives want Consumers Energy to integrate prosperity group members into the processes of relicensing, sale, or decommissioning. They and the broader public also would benefit from having simple illustrations about the decision points and milestones associated with each of the three scenarios.

Risk Five: Selling the River Hydros

Of the three scenarios examined by the prosperity groups, the possible future in which the river hydros remain but are owned by a new entity elicited the most concern. Even among group members that expressed that they would like to see the river hydros remain stated that a new owner brings continued uncertainty about values alignment with the communities and what new ownership means for the communities and in the mid and long term. Some of these concerns could be assuaged by clearly explaining what the process would look like and including community and stakeholder representatives in the process in a meaningful way to maintain productive relationships with its customers throughout Michigan.

Next Steps

The prosperity group members we heard from are anxious for Consumers Energy to make and announce its decisions about the river hydros after living with three years of uncertainty. They are ready to move forward and have agency to build their preferred visions of prosperity.

Consumers Energy expects to announce its decisions about the river hydros' futures around the end of March 2025. Our recommended next steps for how the company can engage with the communities and key interested parties are aligned with Consumers Energy's ongoing commitment to transparency and the company's triple bottom line of people, planet, and prosperity. Further, the following recommendations recognize the interests and desires we heard from group members.

- Disseminate Consumers Energy's decisions about the river hydros to the prosperity group conveners and members in a timely manner.
- Host community public meetings for all 13 river hydros within two weeks following Consumers Energy's decisions.
- Support meetings of the prosperity groups, which will need to reconvene after the community meetings to discuss the role of their groups and the chosen priorities during spring and fall in-person meetings. The decisions on Consumers Energy's continued operations of the river hydros will guide the frequency and purpose of prosperity group meetings.
    - **If the decision is to sell,** hold a meeting to discuss the sale and the anticipated next steps.
    - **If the decision is to decommission and remove,** hold a meeting to discuss the decision, understand the timeline and studies that will be needed, identify and invite experts from Consumers Energy to discuss key topics, and discuss what community representation is needed for the process.
    - **If the decision is to relicense,** hold a meeting to discuss the decision, then pause the group until Consumers Energy is closer to the relicensing time frame. Subgroups could form and meet on the different relicensing topics.

No matter what Consumers Energy decides regarding the river hydros, not everyone will support the decisions. More to the point, there will be opposition to any decision made. The company can prepare for the next phase of the conversation by focusing on transparency in all communications, open discussion, and a thoughtful process that includes the priorities of the prosperity groups among its considerations.

Prosperity Group Priorities

The culmination of the prosperity groups' activities in 2024 are the priorities each group identified as being important to their communities' prosperity under the three potential scenarios for the river hydros. This section presents the priorities by group along with maps of each group's area of interest in alphabetical order by river. The order in which the priorities are displayed are not indicative of importance. In some instances, the information has been provided by the groups' conveners.

Au Sable River

Three prosperity group formed to discuss the six Consumers Energy–owned river hydros on the Au Sable River. The Upper Au Sable group focused on Mio Dam (Exhibit 5), the Middle Au Sable group focused on Alcona Dam (Exhibit 7), and Lower Au Sable group focused on the four dams in Iosco County: Cooke, Foote, Loud, and Five Channels (Exhibit 9). PSC provided facilitation services to these groups in cooperation with local government partners.

Mio Dam

Outdoor Recreation; Fishery Protection and Restoration; Dam Safety

The Upper Au Sable prosperity group identified **outdoor recreation** as the surrounding community's greatest asset; recreational opportunities are inextricably linked to the community's long-term prosperity. This is a priority in all three scenarios. If Mio Dam remains, group members prioritize expanding recreational opportunities and increasing the number of visitors to the area through a marketing campaign. Recreational opportunities were recognized as having impacts on local quality of life and tourism, which drives the economy. If the hydro facility remains but changes ownership, recreational opportunity expansion and marketing are still top priorities. If Mio Dam were to be removed, the group would support expanded recreational opportunities made possible by a free-flowing river and newly emergent lands.

The prosperity group identified **fishery protection and restoration** as another priority for the area's prosperity. Anglers are an important part of the area's tourism base and the local community, and members of this group value a healthy environment and natural resources. Whether Mio Dam is relicensed by Consumers Energy, is sold to another buyer, or is decommissioned, improving the health of the Au Sable River fishery and providing access to the public are important to the group members.

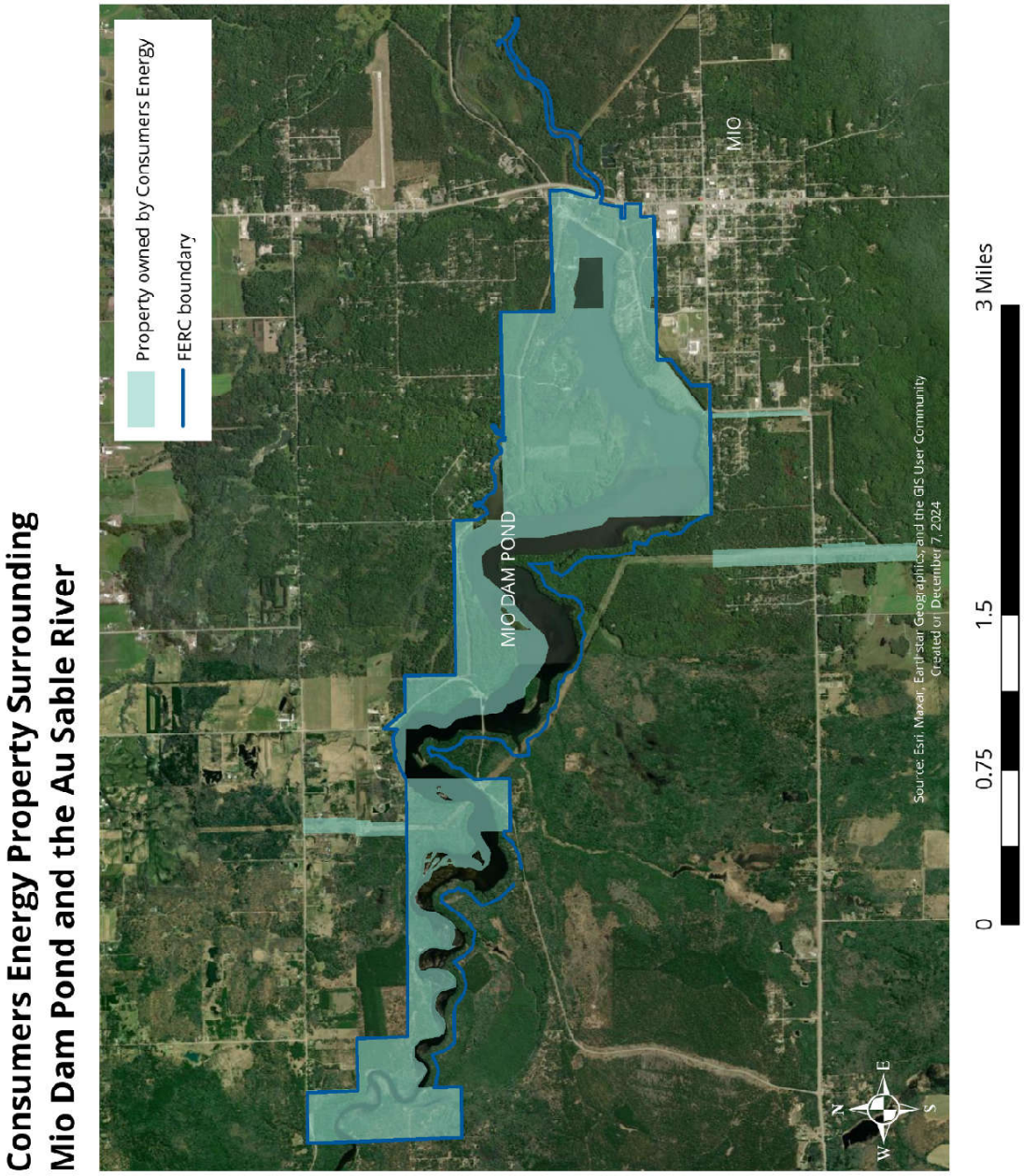
This group identified several priorities related to **dam safety, long-term maintenance, and lease arrangements** in the event of a sale. They noted that, because the new owner would not have a track record of being a good partner in the community, they would want the owner to demonstrate investment in dam safety and show that they had a fiscal plan for eventual dam removal. Citing other dams that have failed or been abandoned in Michigan, they worried that the new owner would abandon the dam when it was no longer profitable, leaving local governments with the responsibility of maintaining or removing the facility. Members also seek some assurance that current leases would be honored and renewed by the new owner, as they presumably would be if Consumers continued to own the dams. In this scenario, they requested that Consumers negotiate with the buyer to guarantee not only the transfer of current leases until the end of the current license period, but the renewal of those current licenses and leases through the next license period as well.

In the event Consumers Energy decides to remove Mio Dam, group members prioritized studying the potential effects that lowering the water table may have on wells, along with concerns about property values and water access. In addition, group members agreed that significant planning and communication would need to be done to transition the community into its new state.

Representatives from these groups participated in the prosperity group formed for Mio Dam:

- Anglers of the Au Sable
- Big Creek Township
- Consumers Energy
- Hinchman Acres
- Huron Pines
- Michigan Department of Natural Resources
- Office of State Senator Michele Hoitenga
- Oscoda County Chamber of Commerce
- Oscoda County Clerk
- Oscoda County Economic Development Corporation
- Save the Dams
- Trout Unlimited
- United States Forest Service

EXHIBIT 5. Consumers Energy Property Surrounding Mio Dam and Pond and the Au Sable River



The Upper Au Sable: Mio Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 6. Items listed for Scenario Two below are in addition to Scenario One items, ideally.

EXHIBIT 6. Upper Au Sable: Mio Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Expand recreational opportunities	Build more access to the river/lake, improve existing access points	Approval from Manistee-Muskegon-Au Sable Coordination Team (MMAC) and FERC, investment from Consumers; add this to the recreation portion of the land management plan
	Build more trails, especially those accessible to outdoor recreation vehicles (ORVs) Prioritize town-to-town trail systems Biking/hiking trails on the north side of the pond	Change land management plan to allow ORVs, limit them to specific use areas Need investment from Consumers outside of the traditional recreation plan
	Build a new boat launch downstream of the Camp 10 bridge (tall boats can't pass under the bridge)	Need approval from MMAC and FERC.
Ensure dam safety	Continue to maintain the dam and surrounding lands with sufficient funding for safety	Continue to apply for grants and loans
Develop additional parks	Use Consumers-owned land to build a new park on the north side of the pond, with preference for designation as a state park	Approval from MMAC and FERC; need to develop a plan and negotiate with the DNR or county
Market the region as a recreational destination	Develop a marketing plan that involves Consumers, DNR, and the U.S. Forest Service Continue and build upon the Au Sable Canoe Marathon	Community committee: Oscoda County Chamber and Economic Development Corporation, DNR, Forest Service, and Consumers Funding from Consumers
Protect the fisheries	Explore ways to lower water temperature in and downstream of the impoundments	Consultants and experts in the field, approval from MMAC and FERC, funding from Consumers
	Continue run of river operations required under the federal Clean Water Act	
	Invest in research to understand wild brown trout populations below the dam	Habitat improvement account or direct funding for the study, nonprofit organizations
	Build fish ladders on every dam up to Mio	Conduct a feasibility study including the U.S. Fish and Wildlife Service, Great Lakes Fishery Commission, and other nonprofits

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Protect leaseholders	Transfer land licenses and leases (e.g., Oscoda County Park) from Consumers to the new owner	Negotiated as part of the sale agreement between Consumers and the buyer
	Require new owner to extend current licenses and leases through the next relicensing period	Negotiated as part of the sale agreement between Consumers and the buyer
Plan for the next 50–100 years of dam operation	Implement a bond or other surety for the new owner's responsibility for safe operation and eventual dam removal	Requirement of the sale agreement
	Delineate the responsibilities of the new owner	Consumers should create a public-facing document summarizing responsibilities
	Build funding for dam maintenance and upgrades into the power purchase agreement	Requirement of the sale agreement
Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Plan for the transition and new state	Develop a land management plan that includes bottomlands and surrounding lands and prioritizes keeping land in public ownership	Consumers convene a group to develop a land management plan; clarify and amend state Natural Scenic Rivers requirement to include FERC lands
	Ensure community involvement in feasibility study, communicate results to understand the impact of removal	Have public meetings, continue prosperity groups, include artistic renderings of river restoration and community post-removal, consider creative uses for existing infrastructure
	Compensate local business owners for lost revenue and value through the transition period	Consumers creates a community fund
Expand recreational opportunities	Build nonmotorized trails on the exposed bottomlands with access points and connect to larger trail system	Convene community to create a plan, which should be incorporated into the township recreation plan and county master plan; ensure coordination so lands are not committed twice
	Keep the land public and undeveloped	Meet with local, state, and Forest Service officials to determine how to transition the land
Protect property owners	Mitigate any effects of removal on wells	Inventory wells, conduct an impact study, create a mitigation fund
	Ensure that those who have river access now still have it after removal	Offer portions of bottomlands to owners for access, determine how to offset initial cost and tax increases
	Compensate lakefront property owners for any lost property value, protect from unexpected tax increases due to increased acreage	Study to determine property values pre- and post-removal; develop a community fund

Alcona Dam

Outdoor Recreation and Nature; River Health; Dam Safety

The Middle Au Sable prosperity group recognized **outdoor recreation and nature** as key to the community's long-term prosperity. In the scenario where Alcona Dam remains and Consumers Energy maintains ownership, the group prioritizes increasing outdoor recreation opportunities to improve residents' quality of life and tourist activities. If the dam is sold, the group expects the community will still want to expand outdoor recreation and improve river health. The group agreed that increasing recreational opportunities would be a priority under this scenario, including trails, fishing, and wildlife viewing.

The group prioritized **improving river health** across all three scenarios because a healthy river system is essential to tourism and community prosperity. They also seek to ensure a healthy ecosystem post-removal where restoration occurs of the river floodplain, historic plant communities, and natural features.

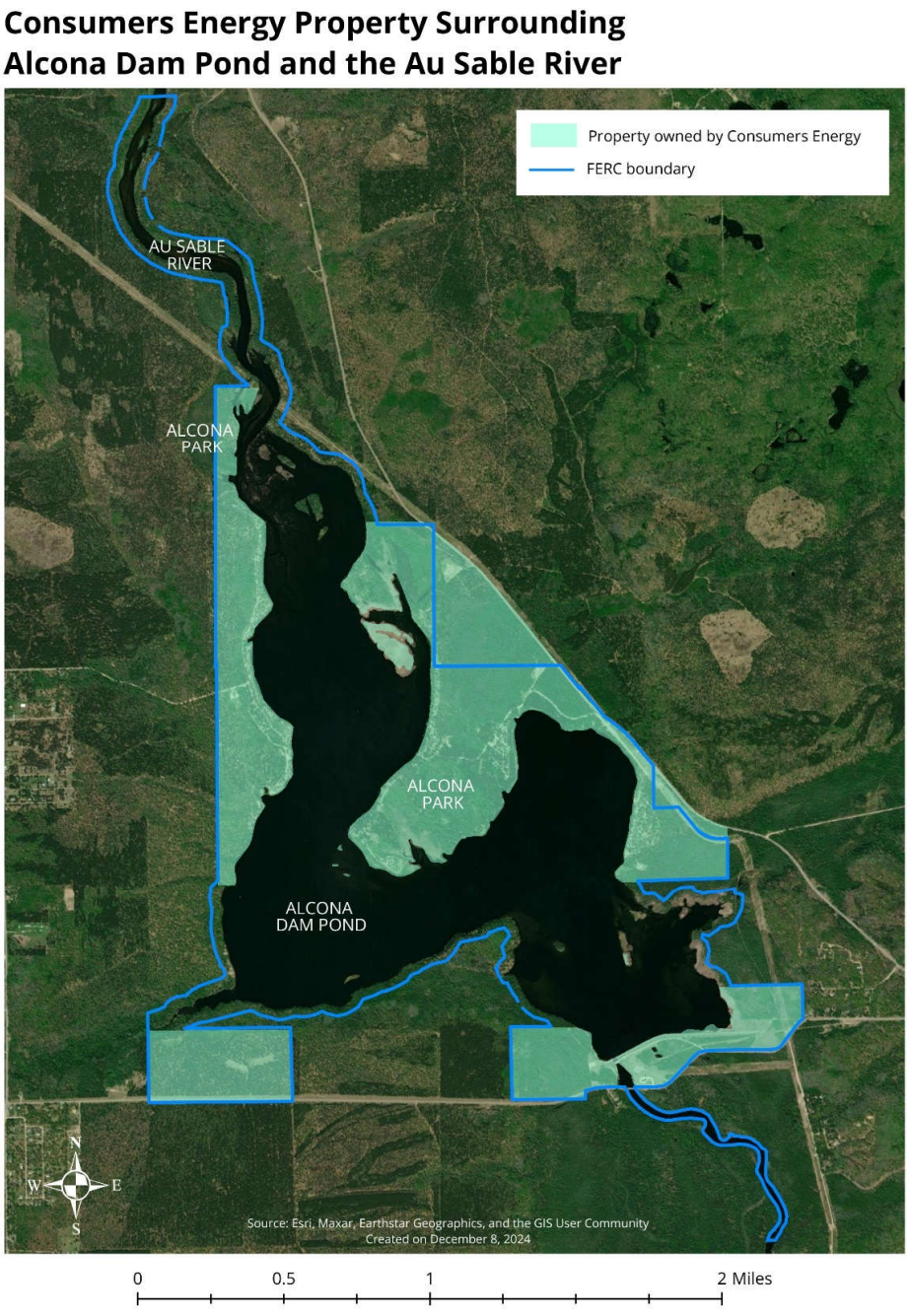
Tourism drives the local economy, so the community could benefit from a marketing campaign as an outdoor recreation destination under all three scenarios for Alcona Dam. If the dam was removed, group members would like to pursue economic diversification through regional coordination and possible repurposing of existing river hydro infrastructure.

The group emphasized the need for **continuing safe dam operations.** They recognize Consumers Energy as a reliable partner, especially when it comes to operating the dam safely, but also saw room for improving communication between Consumers and the broader community. If the dam is sold, group members expressed concerns about a buyer's ability to maintain the dam, and the possibility that a buyer would abandon the dam when it was no longer profitable, rather than removing it responsibly. They also suggested additional ways that the buyer could build relationships in the community.

Representatives from these groups participated in the prosperity group:

- Alcona County
- Anglers of the Au Sable
- Consumers Energy
- Curtis Township
- Curtis Township Library
- Curtis Township Planning Commission
- Eagle Ridge Golf Course
- Glennie Sportsman Club
- Heritage House Realty
- Huron Pines
- Michigan Department of Natural Resources (DNR)
- Office of State Senator Michele Hoitenga
- Trout Unlimited

EXHIBIT 7. Consumers Energy Property Surrounding Alcona Dam and Pond and the Au Sable River



The Middle Au Sable: Alcona Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 8. Items listed for Scenario Two below are in addition to Scenario One items, ideally.

EXHIBIT 8. Middle Au Sable: Alcona Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Expand recreational opportunities, increase public access to the river and lake	Expand trails, including ORV, multiuse, horse, and water trails; explore the possibility of pursuing water trail designation	Approval from MMAC, FERC, and DNR; investment from Consumers Build a "friends of" organization to assist with maintenance
	Improve the fishery via habitat management	Consumers add a bubbler to the pond DNR and the US Forest Service add coarse woody debris
	Inventory access points, plan for improving existing points and filling gaps	Identify and secure funding for the inventory Huron Pines could do the inventory USFS, DNR, and Michigan Trails & Greenways Alliance would also be involved
	Explore grants to increase boating and kayaking opportunities	Team effort—led locally, Huron Pines can assist. Planning help from the Michigan Office of Rural Prosperity; continue Au Sable Canoe Marathon
Maintain a healthy river corridor	Continue or expand Habitat Improvement Account	Consumers with planning assistance from the Office of Rural Prosperity
	Create a river management and stewardship organization	Need a lead organizer
	Monitor water quality, sediment, erosion, invasive and threatened/endangered species	Resource agencies and Huron Pines would be involved
Continue Consumers Energy's Habitat Improvement Account (HIA)	Expand HIA by adding fish loss from factors other than entrainment to the calculation	Consumers, MMAC, FERC would be involved
	Expand HIA calculation to include species other than fish	Identify supplemental grant opportunities
Continue dam safety measures and community's relationship with Consumers Energy	Maintain current safety practices	Consumers; continue to apply for safety grants and loans
	Increased communication with Alcona Park	Consumers Hydro Land Management attend Alcona Park board meetings periodically and as invited
	Maintain transparency about operations with the public	Consumers communicate information about dam operations or events

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key actions**	**Launch step**
Maintain dam safety into the future	Implement a bond or other surety for the new owner's responsibility for safe operation and eventual dam removal	Consumers negotiation with buyer
	Build funding for dam maintenance and upgrades into the power purchase agreement	Consumers negotiation with buyer
Build a working relationship with the new dam owner	Maintain lease agreements through the next license period	Consumers negotiation with buyer; Curtis Township to have the option to participate in negotiations related to Alcona Park
	Open lines of communication between the new owners and the community	Buyer attends local government meetings periodically to update community about dam operations; creates and updates Alcona Dam Facebook page

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Increase year-round recreation, shifting to more land- and river-based activities	Build hiking and biking trails in the bottomlands	Consumers, MMAC, and FERC are involved
	Transition snowmobile trails to include ORVs, link to regional trail network	Consumers, MMAC, and FERC are involved
	Create recreation management plan	Consumers, MMAC, and FERC are involved
	Increase ADA-compliant access points	Consumers, MMAC, and FERC are involved
Create and build on opportunities that preserve or increase unique habitat and wildlife	Develop a land management plan covering wildlife habitat and threatened/ endangered species	Consumers, MMAC, and FERC as part of the decommissioning plan, local conservation groups
	Expand designation of the Wild and Scenic River beyond current boundaries	USFS and Consumers are involved
	Restore wetlands, oxbows, and floodplain in bottomlands	Consumers, MMAC, and FERC as part of the decommissioning plan, local conservation groups
	Remove or treat invasive plant species, restore historical plant communities	Huron Pines could conduct invasive species inventories, treatments for their removal, and increase native plant diversity
Restore the cold-water fishery	Plantings at the river edge; habitat structure and stream modification	Consumers, MMAC, FERC, and local conservation groups
	Monitor fish communities and channel morphology before and after dam removal	Consumers, MMAC, FERC, local conservation groups, outside researchers, and universities
	Research and stewardship opportunities for people in the community	Consumers, MMAC, FERC, and local conservation groups

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Pursue economic diversification and the potential for new industries and businesses	Develop a marketing plan for the area as a recreation destination	Consumers, Alcona community, Northeast Michigan Council of Governments, funding from the Office of Rural Prosperity
	Develop a vision for repurposing the dam structures	Potential buyer of the powerhouse, Consumers, DNR Natural Rivers; need a feasibility study
	Research developing an Au Sable River Council made up of counties, local nonprofits, etc.	Consumers, local conservation nonprofits, DNR, USFS, Alcona County Potential for members to be appointed by the governor
	Develop a marketing plan for the area as a recreation destination	Consumers, Alcona community, Northeast Michigan Council of Governments, funding from the Office of Rural Prosperity

Lower Au Sable: Cooke, Foote, Loud, and Five Channels Dams

Tourism; Dam Safety; Invasive Species Prevention

The Lower Au Sable River prosperity group prioritized opportunities and investments to **bring more year-round tourism to the region.** While this section of the Au Sable River has more economic diversity than the middle and upper sections, with Wurtsmith Air Force Base and two towns on Lake Huron, group members noted that much of the tourism–which remains the most important economic engine for the region—is tied to the river hydros and the Au Sable River.

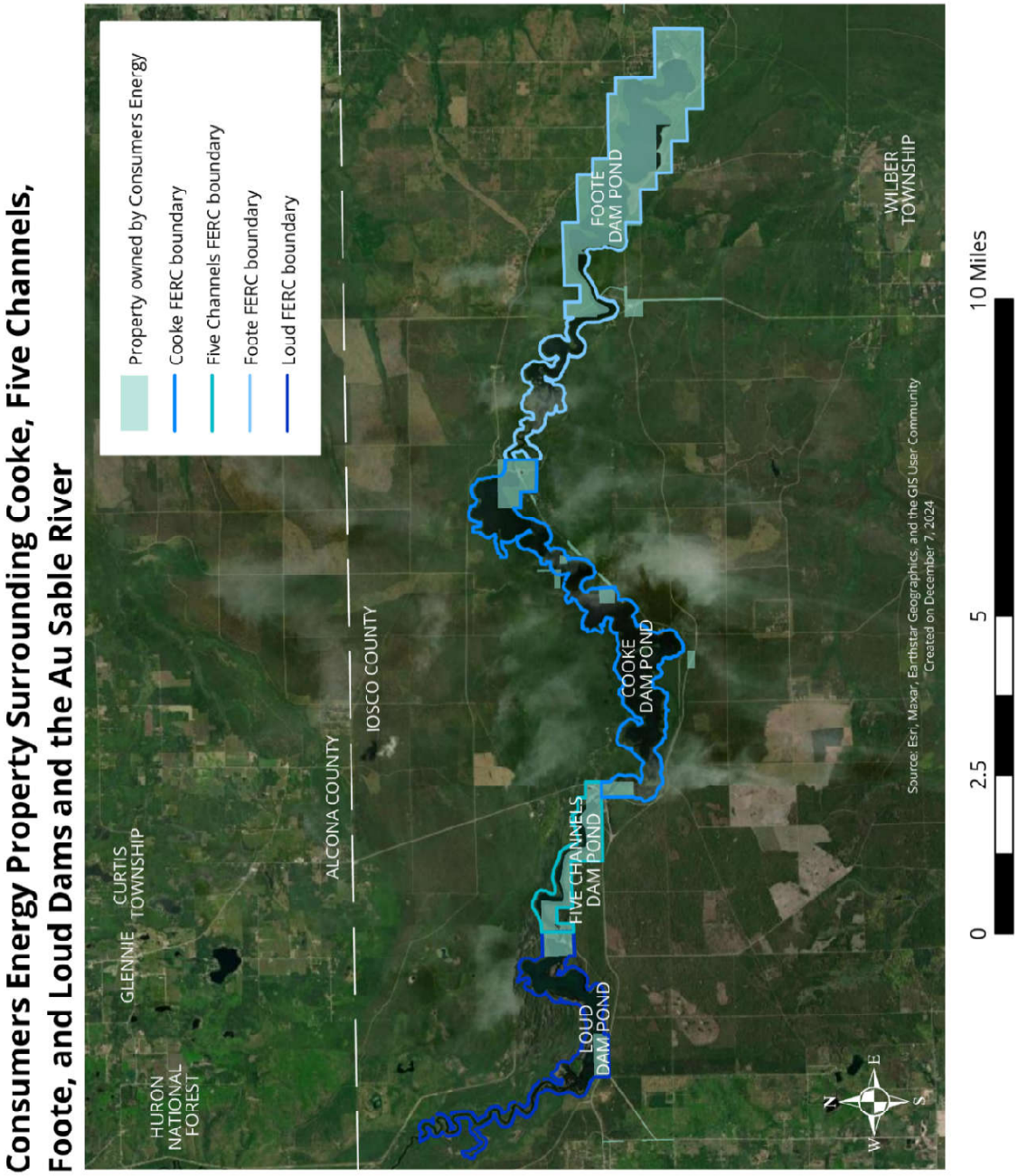
While **safe operations of the river hydros** are a priority for the group across all three scenarios, it is a top priority if a sale occurs. Group members seek assurance that a new owner can continue safe operations and have the financial or technical wherewithal to provide the same or better level of care and upkeep than Consumers Energy.

Under a decommissioning scenario, the group prioritized **invasive species prevention** and the need to identify and develop different **outdoor recreation and tourism** opportunities. The group also discussed the financial impact that scenario could have on some of the county parks and campgrounds.

Representatives from these groups participated in the prosperity group:

- Bissonette Landing Homeowners Association
- Charter Township of Au Sable
- Consumers Energy
- Develop Iosco
- Great Lakes Fishery Commission
- Iosco Conservation District
- Iosco County
- Michigan Department of Natural Resources
- Michigan Hydro Relicensing Coalition
- Old Orchard Park
- Oscoda Area Schools
- Oscoda Township
- Oscoda Township Parks and Recreation
- Pine Acres
- Plainfield Township
- Saginaw Chippewa Indian Tribe
- Save the Dams
- Office of State Senator Michele Hoitenga
- Seven Mile Hill Homeowners Association
- Wildcat Gulley Homeowners Association

EXHIBIT 9. Consumers Energy Property Surrounding Cooke, Five Channels, Foote, and Loud Dams and Ponds and the Au Sable River



The Lower Au Sable: Cooke, Five Channels, Foote, and Loud Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 10. Items listed for Scenario Two below are in addition to Scenario One items, ideally.

EXHIBIT 10. Lower Au Sable: Cooke, Five Channels, Foote, and Loud Dams Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Expand/protect current recreation opportunities	Expand access and handicapped access, especially at Foote site	Consumers Energy, Manistee-Muskegon-Au Sable Coordination Team (MMAC), and the Federal Energy Regulatory Commission (FERC)
	Expand parking at boat launches	Consumers Energy, MMAC, and FERC
	Inventory properties and assets	Consumers Energy, MMAC, FERC, and community stakeholders (i.e., local governments)
	Develop a recreation management plan for the four dams	Consumers Energy and community stakeholders
Ensure dam safety	Continue transparency between Consumers Energy and the community	Consumers Energy: "Toot your own horn" and promote all the contributions made in regular updates to the community Local governments will invite Consumers Energy to board meetings at a frequency to be determined
	Develop a long-term process for safety	Consumers Energy
Maintain and increase access to the waterway and the land around it	More and bigger boat launches, kayak launches	Include in the recreation management plan; Consumers Energy, MMAC, and FERC
	General improvement of current sites	Include in the recreation management plan; Consumers Energy, MMAC, and FERC
	Renovate access sites to be Americans with Disabilities Act (ADA) compliant	Include in the recreation management plan; Consumers Energy, MMAC, and FERC
	Ensure current license and leaseholders (e.g., Old Orchard Campground) keep access as it currently exists	Consumers Energy
Increase promotion of Iosco County as a year-round destination to live, work, and play	Develop a marketing plan	Develop Iosco, Oscoda Chamber of Commerce, convention and visitors bureaus (CVBs), Iosco County, local townships, Northeast Michigan Council of Governments (NEMCOG)
	Social media, statewide promotion	Develop Iosco, Oscoda Chamber of Commerce, CVBs, Iosco County, local townships, NEMCOG
	Develop and enhance partnerships Continue and build on Au Sable Canoe Marathon	Michigan Office of Rural Prosperity, Alcona County, Oscoda County, communities along the Au Sable River from Mio to Oscoda, Huron Pines, National Park Service
	Continue and enhance opportunities for event sponsorship	Consumers Energy

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Strengthen and protect the fisheries	Conduct a fisheries study including ecological and engineering considerations	Consumers Energy and MMAC
	Ensure continued invasive species control	Consumers Energy and MMAC
	Address river flows for fish habitat	MMAC and FERC
	Develop more access for fishing opportunities	Consumers Energy and MMAC
	Build more boat wash stations	Consumers Energy, MMAC, FERC, and MSU Extension
	Address water temperature concerns	Michigan Department of Environment, Great Lakes, and Energy (EGLE), Consumers Energy, MMAC, and FERC
	Examine feasibility of fish ladders at all dams	Consumers Energy, MMAC, and FERC

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Protect current recreational opportunities and access	Expand access and handicapped access at all four dams, especially Foote Dam	Consumers Energy communicates priority to the new owner
	Expand parking at boat launches	Consumers Energy communicates priority to the new owner
	Inventory properties and assets as part of developing a recreation management plan for the four dams	Consumers Energy communicates priority to new owner
Ensure safe dam operations	Continue transparency between the dam owner and the community	Negotiations between Consumers Energy and new owner
	Confirm long-term process for safety	Negotiations between Consumers Energy and new owner
	Ensure financial viability of new owner to maintain the dams—implement a bond or other surety for the new owner's responsibility for safe operation and eventual dam removal	Negotiations between Consumers Energy and new owner
	Build funding for dam maintenance and upgrades into the power purchase agreement (PPA)	Negotiations between Consumers Energy and new owner
	Communication with local units of government	Negotiations between Consumers Energy and new owner
	Maintain community involvement	Negotiations between Consumers Energy and new owner

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Maintain all leases and licenses	Ensure Old Orchard Campground lease continues	Consumers Energy negotiation with new owner; recommend maintaining licenses and leases to the end of the FERC license
	Ensure current license and leaseholders keep access as it currently exists	Consumers negotiation with new owner; recommend maintaining licenses and leases to the end of the FERC license
Increase promotion of Iosco County as a year-round destination to live, work, and play	Develop a marketing plan	Develop Iosco, Oscoda Chamber of Commerce, CVBs, Iosco County, local townships, and NEMCOG
	Social media and statewide promotion	Develop Iosco, Oscoda Chamber of Commerce, CVBs, Iosco County, local townships, and NEMCOG
	Develop and enhance partnerships	Michigan Office of Rural Prosperity, Alcona County, Oscoda County, communities along the Au Sable River from Mio to Oscoda, Huron Pines, and National Park Service
	Identify opportunities for event sponsorships	Meet with new owner

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Protect adjacent landowners, local businesses, and local governments from financial impacts	Understand impacts and protect wells near impoundments	Consumers Energy as part of decommissioning planning
	Create a business remediation or support fund including communications about access during decommissioning process	Consumers Energy—grants to businesses, Michigan Office of Rural Prosperity, Develop Iosco, State of Michigan
	Develop a land management plan including inundated area (e.g., recreation, wildlife habitat, remediation, restoration plans)	Consumers Energy
	Conduct studies around decommissioning, including economic	Consumers Energy
	Develop a communications plan that includes community impacts and mitigation activities	Consumers Energy
	Develop an education plan so everyone understands the decommissioning process and rationale	Consumers Energy
	Determine bottomlands ownership	Consumers Energy
Preserve the area around the dams for public use	Develop a recreation plan including an evaluation of sites and best uses	Consumers Energy, Michigan Office of Rural Prosperity
	Enhance river access	

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Develop and market the region as a year-round destination to live, work, and play	Develop a marketing and prosperity plan that includes clientele and markets	Consumers Energy, NEMCOG, Develop Iosco, local governments, chambers of commerce
Control invasive species	Conduct a fisheries study including feasibility in controlling invasive species	Consumers Energy, MMAC, Great Lakes Fishery Commission (GLFC), watershed group, friends group
	Non-aquatic invasive species control and management plan	Huron Pines, conservation districts
Explore new uses for the buildings associated with the dams	Conduct a study to determine if the powerhouses can be repurposed	Consumers Energy
Determine feasibility of maintaining any impoundments	Conduct a feasibility study to determine if local community could maintain an impoundment at any or all sites including operations, financials, and funding	Consumers Energy, local governments, GLFC, EGLE, U.S. Army Corps of Engineers

Grand River

Webber Dam

Outdoor Recreation; Tourism; Healthy River Habitat; Property Values and Taxes; Public Safety

The prosperity group identified **outdoor recreation and tourism** as priorities for community prosperity across all three scenarios for Webber Dam (Exhibit 11). Members expect opportunities for both priorities to increase under a dam decommissioning scenario and bring more opportunity for economic activity. **Healthy river habitat** was identified as a priority for environmental benefits and economic benefits since a healthy river encourages more recreation and tourism.

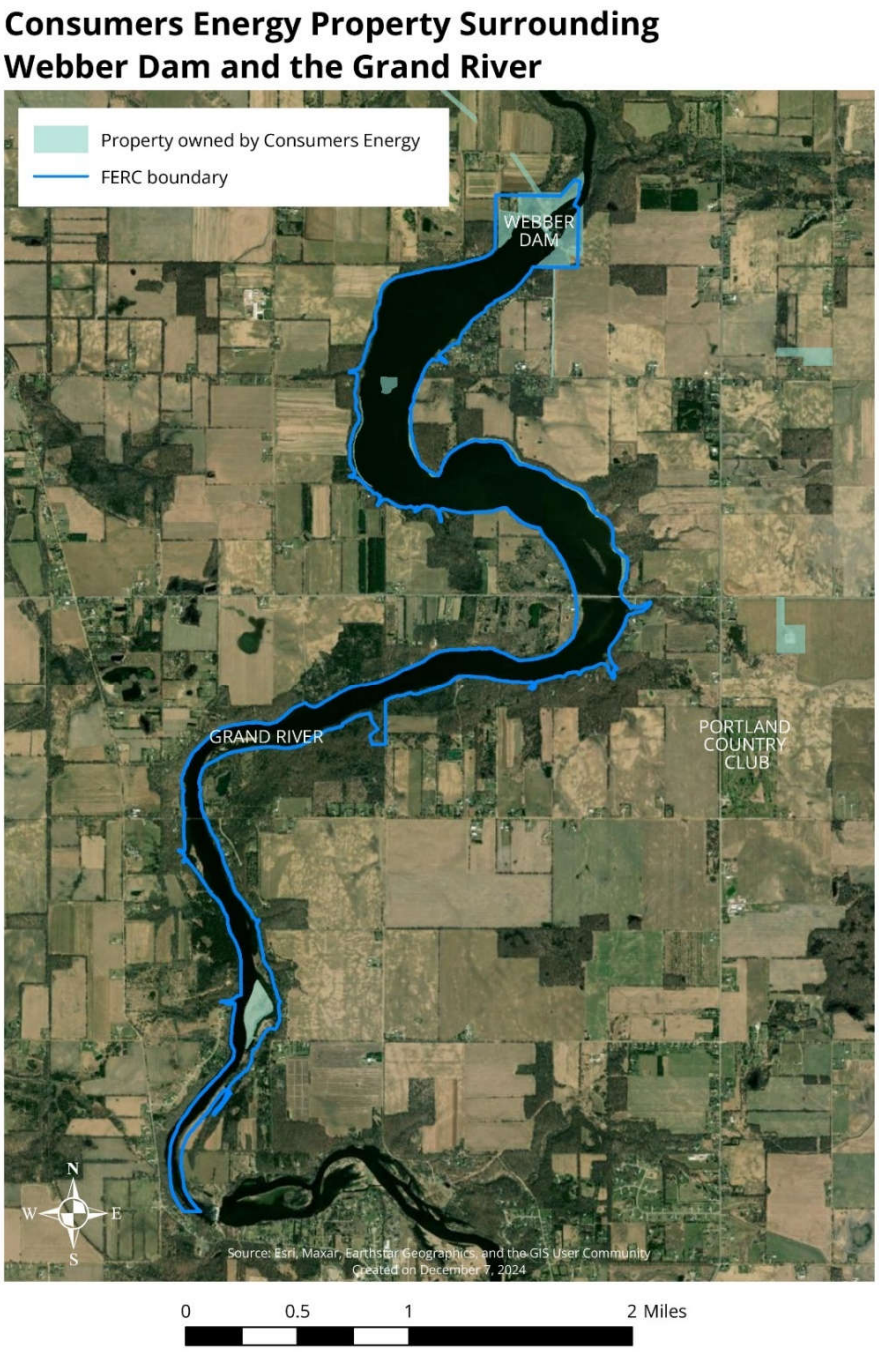
Property values and taxes were a priority for the group as Consumers Energy is the largest taxpayer in Lyons Township and residents want to at least maintain the current value of their properties. Little change would be expected in the scenarios where Consumers Energy relicenses the river hydro or sells it to a new owner. If the decision is to decommission, group members would expect a property assessment be done to determine ownership and real estate values.

Public safety in relation to river hydro operations was another priority. In the event of a sale, they are concerned that operations and maintenance by a new owner may put the community in danger. The community's history with cost of and liability of Lyons Dam and its subsequent removal is still fresh in the mind of the community, and they do not want to be held responsible for Consumers Energy choices. Group members noted the decommissioning scenarios offers the safest solution since the threat of a dam failure would be removed.

The Webber Dam prosperity group was facilitated by the Ionia Conservation District. Representatives from these groups participated in the prosperity group:

- City of Ionia
- Consumers Energy
- Great Lakes Fishery Commission
- Ionia County
- Ionia County Chamber of Commerce
- Ionia County Economic Alliance
- Lyons Township
- Michigan Department of Natural Resources
- Sessions Lake Equestrian Group
- Village of Lyons
- Village of Muir

EXHIBIT 11. Consumers Energy Property Surrounding Webber Dam and Pond and the Grand River



The Grand River: Webber Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 12.

EXHIBIT 12. Grand River: Webber Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Impoundment recreation continues	Fish ladder remains in effect, managing salmon population	DNR continues to operate fish ladder, potentially preventing spread of invasive species
	Current impoundment recreation includes some bass fishing and pleasure cruise with improvement	Consumers would continue to maintain the impoundment near the hydro facility and improve boat launch that provides access to the impoundment
	Improve downstream recreation including cold stream fishing, boating, kayaking	Community would like improved recreational opportunities, including trails, educational materials, and boat launches
The community continues to receive power from Consumers Energy	Current power generated is 1.3 megawatts per day	Consumers continues to maintain hydro facility, providing service to the region
	Cost of generation is greater than expense of maintaining the hydro facility	It would be in Consumers' best interest to find a solution to making the hydro facility profitable
	Other power sources may have other negative externalities and costs to the community	Wind and solar power would be new additions to the community, new partners would be developed, and a plan for future decommissioning of those facilities would be considered and required
Consumers continues to be largest taxpayer in Lyons Township	Consumers provides significant tax funding to Lyons Township	Consumers would continue to pay taxes as Lyons Township landowner
	No cost for removal would be required from any party	The Township, County, or State would not be responsible for any removal costs
Community maintains existing relationship with Consumers Energy	Consumers remains as a partner in Lyons Township and Ionia County	Consumers, Ionia County, and Lyons Township enjoy a relationship, functional at worst and symbiotic at best
	Consumers will continue to be involved in the community	Consumers continues to operate the facility
	Consumers will continue to provide power to the surrounding area from the hydro facility	Consumers continues to operate the facility and/or supply power even in the event of change
Property values remain the same	No change to the impoundment results in no change to properties on either side of the hydro facility	No action required; local landowners retain status quo of ownership
	Changes in property size could cause fluctuation in property value and tax assessments—this would not be the case if the properties remained the same	Consumers, a tax assessor, and survey team would be required if new property lines were to be drawn
	Those who currently have water access will continue to have access	Property owners are concerned about changes to water access and their existing docks—this would provide no change

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Need to develop trust with the new owner, potential to lose say in decisions around land use	A new third party could provide new solutions	Consumers, the community, and the third party would take an active role in solving future problems and providing prosperity to the community
	A new third party is unpredictable and does not have an existing relationship with the community	The community would have to navigate a new relationship with the existing memories from the Lyons Dam removal The third party is unpredictable, which is concerning to the community Consumers would need to be proactive in ensuring a new and loyal partner
New owner *could* bring new business and promotion	The new third party could theoretically provide new economic opportunities	This is also unpredictable and is concerning to the community Consumers would need to verify that the new owner would benefit the community

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Improve riparian habitat	Historical habitat restored, providing potential expansion for endangered species	A partnership between Consumers, DNR, and County would be active in ensuring responsible restoration
	Improved fishing for trout and salmon anglers	DNR and community members benefit from different riparian aquatic species
	Riparian wetland habitat can establish in new flood plain	Careful restoration and monitoring of the historical seedbank by the conservation district and DNR in the new flood plain upstream of the dam could result in rare habitat conservation
	Lower water temperatures increasing available dissolved oxygen, improving habitat	This project would align with other river restoration projects further downstream DNR would monitor habitat over time
Improved and diversified recreation	Increased numbers of community members using recreational facilities	Consumers and the community would work together to promote local recreation on the Grand River Improve trails and recreation, prioritizing ADA accessibility Install interpretive signs for education
	More recreational activities available	Boat passage would make traveling downstream easier, increasing opportunities for different types of angling DNR and the community would ensure safety and quality
	Higher quality of recreational activities available	Presently, the downstream access is used 3x more than the impoundment boat launch A new boat launch could include an ADA-accessible kayak/canoe launch

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
	Potential for new green spaces	DNR, conservation district, Consumers, and community could install a public green space that would be ADA accessible and include educational interpretive signage
Change in community property boundaries and personal residential values	A historical seed bank could be exposed on new property	DNR and conservation district would collaborate to ensure habitat conservation with Consumers funding
	Landowners could gain property	Landowners, township, surveyors, and tax assessors would determine any increase in property and its use Consumers would be active in stabilizing new landforms
	Property values are difficult to predict–some owners could lose the dock access and waterfront property Downstream properties could also be affected	Landowners, township, surveyors, and tax assessors would determine any increase in property and its use
	Assessment of other properties to determine future ownership	Landowners, township, surveyors, and tax assessors would determine any increase in property and its use A public greenspace could be installed
Safety in the short and long term	Safe removal of the facility is essential to the community	Consumers and DNR would hire any required contractors to ensure habitat, safety, and all proper procedures are followed for removal
	Knowledge that the facility will not fail if it is removed	Consumers and DNR would hire any required contractors to ensure habitat, safety, and all proper procedures are followed for removal
Hydro facility operating funds redistributed to benefit the community	Current funds to maintain the facility are not benefiting any parties	Consumers and community would discuss redistribution of funds
	Funds could be diverted to create new power generation infrastructure (current power generated is equal to two windmills)	Consumers can more efficiently change power generation infrastructure without the county needing to be as involved
	Community infrastructure creation	As a partner with the community, Consumers could fund community infrastructure projects

Kalamazoo River

Calkins Bridge Dam

Outdoor Recreation; Dam Safety; Retaining the Lake-Like Impoundment

The prosperity group focused on the Calkins Bridge Dam and its impoundment, Lake Allegan, expressed their need for the several actions from Consumers Energy regardless of the company's decision:

- Consumers Energy to allow and empower group members to be an integral part and partner in the process of relicensing, sale, or decommissioning
- Assets that were previously public before the dam was sold to Consumers Energy ultimately be returned to the public trust once they are no longer used to generate power
- Consumers Energy to contribute financially to the community in support these efforts even if the company sells the assets to a third party to generate power

A priority for the group is **retaining the lake-like impoundment** under the relicense and sale scenarios. They would like to see the impoundment maintained and improved so that it and adjacent natural areas continue to benefit the local economy. Exhibit 13 shows the river hydro, impoundment, and surrounding area.

Maintaining and augmenting outdoor recreation opportunities and access is a priority across all three scenarios for the prosperity group. Property values, sense of place, and local economic activity are centered on close proximity and access to Lake Allegan and the river. Group members want to incorporate walkability and connectivity of trails and natural areas whether the impoundment is retained or not.

Group members also prioritized **safe operations and maintenance of the river hydro** as part of its prosperity plan. They are concerned with the facility's lifespan and what long-term maintenance would look like. In the event of a sale, a priority of the group would be to ensure that Consumers Energy would be a good community partner and that previously public assets that were sold as part of the dam to Consumers would be reverted to the public if power was no longer being generated.

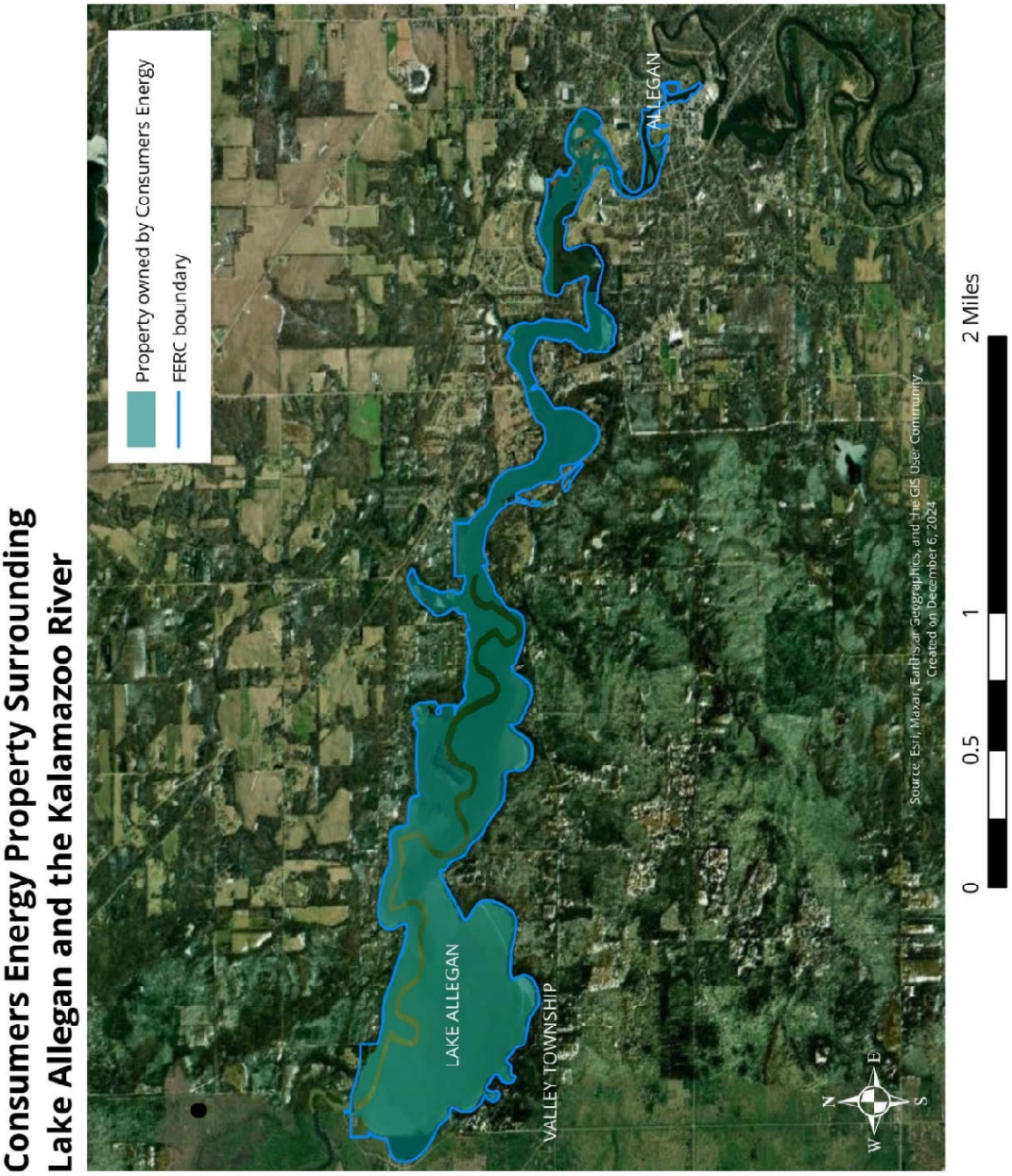
In a decommissioning scenario, the group prioritized demonstrating progress on **PCBs remediation; preventing the spread of invasive species,** particularly sea lamprey; and **compensating waterfront property owners** for any devaluation of their property due to the loss of the lake-like impoundment.

The Calkins Bridge Dam prosperity group was facilitated by Outdoor Discovery Center Network. Representatives from these groups participated in the prosperity group:

- Allegan Conservation District
- Allegan Chamber of Commerce
- Allegan County
- Allegan Township
- City of Allegan
- Consumers Energy
- Great Lakes Fishery Commission

- Kalamazoo River Watershed Council
- Kalamazoo River Citizens Advisory Group
- Lake Allegan Association
- Michigan DNR
- Trout Unlimited
- U.S. Environmental Protection Agency
- Valley Township

EXHIBIT 13. Consumers Energy Property Surrounding Calkins Bridge Dam, Lake Allegan, and the Kalamazoo River



The Kalamazoo River: Calkins Bridge Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 14.

EXHIBIT 14. Kalamazoo River: Calkins Bridge Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key actions**	**Launch step**
Improve upon water and habitat quality within Lake Allegan to control invasive species and sediment contamination	Coordinate with EPA on long-term sediment cleanup and remediation	Consumers involvement in Superfund remediation Data sharing from Kalamazoo Watershed Management Plan–Kalamazoo River Watershed Council and CAG
	Work to control and remove invasive aquatic plants	Take meaningful steps to implement an invasive species control and management plan following Consumers invasive species study for 2024 Report the results of that 2024 study and tell the community specifically what Consumers will do to implement that plan Michigan Clean Water Corps members will be reporting on invasives and water quality of Lake Allegan Identify other partners to implement
	Further implement practices to reduce nutrient and sediment loading into the lake	Consumers should be part of the TMDL working group
	Create conditions for a healthier fish community including implementation of effective fish passage	Carp Derby 2025 – ODC, ACD, Lake Allegan Feasibility study of improving fish ladder that also prevents sea lamprey migration
Ensure property values continue to hold or increase their value	Continue to maintain dam with sufficient funding for safety	
	Seek to maintain character of lake area	Recreational plan for Lake Allegan Commercial development plan Invasive species management plan Allegan County Parks and Rec
	Develop long-term succession plan to maintain an impoundment	Master and recreation plans across townships/communities are in agreement Consumers commits to including conversion of the dam to a non-hydro structure, including funding that conversion, in any future delicensing decision or plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key actions**	**Launch step**
Continue to improve recreational tourism assets and maintain shoreline access to maximize benefits for Lake Allegan and residents of the area	Improve and update existing access points and recreational assets	
	Work with Allegan County Parks and DNR to identify additional opportunities for park space	Use Allegan County's New Richmond Park as a model
	Identify and develop additional access points	
	Collaborate with local/county agencies to promote Lake Allegan to broader public	Marketing plan–support from Consumers Allegan County Economic Development Commission Allegan Area Chamber of Commerce
Manage power generation through renovations to the powerhouse	Ensure dam operates effectively with nearby recreational uses	
	Ensure clear local understanding of property rights and easements	Document and communicate property ownership, tax information, and use with Lake Allegan community
	Determine projects and improvements that may qualify for grant funding	
	Establish recurring meetings between Consumers and local partners	
Develop a strategic community plan that brings municipalities together to build a well-connected lake community	Develop area-specific section of Kalamazoo River Greenway plan	Improve ability to portage canoes and kayaks from Lake Allegan to the river launch area below the dam Include potential canoe livery operators
	Connect relevant elements of Valley Township, City of Allegan, and Allegan County recreation and master plans	Include DNR to incorporate their facilities in the broader plan

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Acquirer is committed to the operation and function of the dam as an impoundment, not for other uses	Transfer land licenses and leases from Consumers to the new owner (e.g., Allegan County)	Part of sale agreement, negotiation between Consumers and new buyer Get the community involved early in the negotiation process
	Require new owners to extend current licenses and leases through the next relicensing period	Have Consumers negotiate this as part of the sale
	Work to gain the necessary first right of refusals to work through acquisition for a nominal price. Ensure that the lake and dam come back to the public at the end of the acquiror's use for power generation	County board Townships City of Allegan Allow local partners the opportunity to review transaction documentation and ensure an understanding that these are public assets
Define and acquire financial assets to secure the impoundment and fund other remediation efforts in Lake Allegan	Implement a bond or other surety for the new owner's responsibility for safe operation and eventual removal conversion of the dam to a non-hydro structure	Requirement of sale agreement Includes fish passage/lamprey exclusion upgrade
	Delineate the responsibilities of the new owner	CE create a public-facing document summarizing responsibilities (on the front end)
	Build funding for dam maintenance and upgrades into the power purchase agreement	Requirement of sale agreement
	Require a MOU/MOA with new owner for continued access and communication around the dam	Ensure long-term recreational usage of Lake Allegan GLFC
Implement a substantial remediation effort that prioritizes sediment management plan, invasive species management plan, and long-term habitat quality and aesthetics	Coordinate with EPA on long-term sediment cleanup and remediation	Consumers and new owner involvement in Superfund remediation Data sharing from Kalamazoo Watershed Management Plan–Kalamazoo River Watershed Council and CAG
	Work to control and remove invasive aquatic plants	Take meaningful steps to implement an invasive species control and management plan following Consumers invasive species study for 2024 Report the results of that 2024 study and tell the community specifically what Consumers will do to implement that plan Michigan Clean Water Corps members will be reporting on invasives and water quality of Lake Allegan Identify other partners to implement
	Further implement practices to reduce nutrient and sediment loading into the lake	Consumers and new owner should be part of the TMDL working group
	Create conditions for a healthier fish community including implementation of effective fish passage	Carp Derby 2025–ODC, ACD, Lake Allegan Feasibility study of improving fish ladder that also prevents sea lamprey migration

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Transition plan is created for Lake Allegan through the relicensing of the impoundment that is managed by the County or State	Funding sources are identified and included in the plan	Consumers creates a trust fund now, intended to support costs of the eventual transition to public ownership Include Georgia Pacific in planning
Create a recreational plan for long-term changes to the Kalamazoo River that is centered around walkability and a partnership with Allegan Parks and Rec	Develop area-specific section of Kalamazoo River Greenway plan	Improve ability to portage canoes and kayaks from Lake Allegan to the river launch area below the dam Include potential canoe livery operators
	Connect relevant elements of Valley Township, City of Allegan, and Allegan County recreation and master plans	Include DNR to incorporate their facilities in the broader plan

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Implement a substantial remediation effort that prioritizes sediment management plan, and long-term habitat quality and aesthetics	Engage with EPA around their long-term PCB cleanup efforts	
	Ensure community involvement in and communicate results of feasibility study to understand the impact of removal	Have public meetings, keep prosperity group; include artistic renderings of river restoration and community post-removal; consider creative uses for existing infrastructure Engage Lake Allegan Association
	Compensate local property owners for lost value through the transition period	CE create a community fund Community transition plan for businesses
Maintain property values and land management through enhancement of a flowing river-based economy	Compensate lakefront owners for loss of property value	Study to determine property value pre- and post-; develop community fund; compensate for removal of permanent structures along the lake
	Keep the land public, undeveloped, and developed only for public recreational use	Meet with local and state officials to figure out how to transition land

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Increase and promote safe access opportunities for paddle sports, fishing, and other recreational access	Ensure that those who have access to the river system now still have it after removal	Offer portions of bottomlands to owners for access, determine how to offset initial cost and tax increases
	Create additional access points	
	Investment in proactive management of wetland (ex. Conservation easement, Greenway plan)	Explore wetland mitigation bank Proactively restore floodplain areas at risk of takeover by nonnative species
Prioritize improving water resource management of groundwater and surface waters	Mitigate the effect of removal on wells by funding wells or other water infrastructure	Inventory wells, conduct study, create mitigation fund
	Ensure river following cleanup will connect well ecologically with rest of river	
Invest in recreation opportunities	Create a recreational plan for long-term changes to the Kalamazoo River that is centered around walkability and a partnership with Allegan Parks and Rec	

Manistee River

One prosperity group with two subgroups formed to discuss the river hydros on the Manistee River, the Hodenpyl Dam and the Tippy Dam. AES provided facilitation services to this group.

Hodenpyl Dam

Outdoor Recreation; Property Taxes and Revenue; Public Safety

The impoundment and river below the river hydro draw residents and visitors for a variety of outdoor recreation opportunities (e.g., camping, boating, fishing, hiking) and generates significant economic activity for the area. Across all three scenarios, group members prioritized **maintaining and improving those opportunities focusing on impoundment-based recreation** if the river hydro remains or a river-based recreation economy that incorporates open space and natural areas if the dam is removed. Exhibit 15 shows the location of Hardy Dam, the impoundment, and surrounding property owned by Consumers Energy.

Public safety in relation to maintenance of the river hydro and impoundment are another priority for the group. In a sale scenario, a new owner's ability to safely maintain the facility is a concern, so the group suggests a private owner be held to the same standards of regulation as Consumers Energy. Further, group members expressed concerns about whether a new owner will seek relicensing with FERC once the current license expires. In a decommissioning scenario, the safety concerns associated with a failure would be removed.

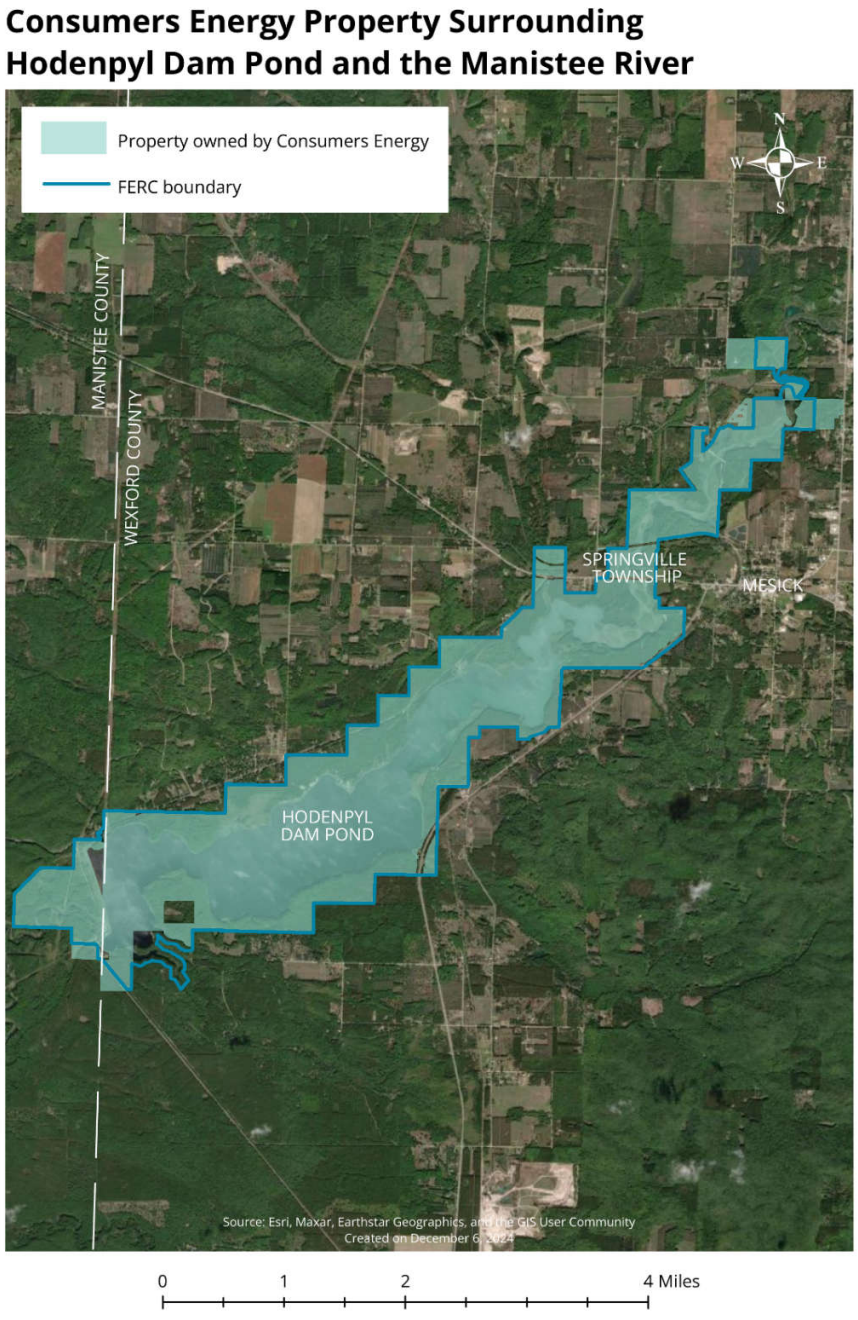
Local units of government and the school districts are supported, in part, by the property tax revenue they receive from Consumers Energy owning land along the impoundment and river. Group members prioritize **ensuring property tax and other revenue is maintained** under a relicensing scenario and a sale scenario. Under a decommissioning scenario, group members suggested **a shift in the tax base** could occur if previously submerged lands are sold to private entities or developed.

Representatives from these groups participated in the prosperity group:

- Alliance for Economic Success
- Cadillac Area Chamber of Commerce
- Cadillac Area Land Conservancy
- Cadillac Area Visitors Bureau
- Chris's RV Campground
- Conservation Resource Alliance
- Consumers Energy
- DNR Fisheries
- Great Lakes Fishery Commission
- Marilla Township
- Michigan Hydro Relicensing Coalition
- Michigan Trout Unlimited
- Northern Exposure Campground
- Pat's RV Park
- Residents and property owners

- Springville Township
- Wexford County
- Wexford County Road Commission

EXHIBIT 15. Consumers Energy Property Surrounding Hodenpyl Dam and Pond and the Manistee River



The Manistee River: Hodenpyl Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 16.

EXHIBIT 16. Manistee River: Hodenpyl Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Maintain dam safety and long-term viability of the dam and impoundment	Maintain Hodenpyl Dam according to Federal Energy Regulatory Commission (FERC) requirements	Consumers Energy meets with community emergency managers and communicate about safety measures and costs
	Continue stakeholder communications	Consumers Energy provides an annual public update about dam operations and events
Maintain and improve recreational opportunities including boating, fishing, birding, hunting and other impoundment recreational activities	Ensure additional resources are acquired to address climate changes	Consumers Energy seeks out federal and state grant funding addressing climate changes that will affect operations of the dam and surrounding impoundments
	Develop a recreational plan that includes more trails, more access points, additional trail signage, and expansive marketing for all forms of recreational activities	
	Continue monitoring river and impoundment water temperatures	Consumers Energy coordinates this with local community and government regulatory officials including United States Fish and Wildlife Service (USFWS) and the Michigan Department of Natural Resources (DNR)
	Continue to monitor and control invasive species	Consumers Energy helps initiate boat cleaning stations for managing invasive species in river and impoundment
Waterfront property ownership and leases remain unchanged	Protect current property values and business viability	Consumers Energy remains engaged in supporting property values and business viability
	Identify opportunities for local businesses to expand	Consumers Energy verifies ongoing property leases
Ensure property tax and other revenue is maintained to help support local units of government and schools	Maintain current FERC boundary	Consumers Energy considers options for private owners to retain or purchase properties

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Maintain safety and long-term viability of the dam and impoundment	Contract terms must address safe operations and long-term structural integrity of the dams	Consumers Energy should negotiate terms of sale for safe long-term operations and the longest possible power purchase agreement (PPA), even beyond 30 years
	Assure stakeholders that funding for dam maintenance and upgrades is covered in the PPA	Consumers Energy negotiates with buyer to implement bonds or other funding mechanisms for responsible and safe dam operation
	New owner must communication with and update community stakeholders regularly	Buyer should be directed to attend local government meetings periodically to update the community about dam operations and financials
Maintain and improve recreational opportunities including boating, fishing, birding, hunting and other impoundment recreational activities	Ensure that resources will be available to address impacts of climate changes	Consumers Energy encourages new owner to seek out federal and state grant funding addressing climate changes that will affect operations of the dams and surrounding impoundments
	Develop a recreational plan that includes more trails, more access points, additional trail signage, and expansive marketing for all forms of recreational activities	Consumers Energy negotiates with new owners to develop a recreational plan with input from environmental nonprofit organizations, Michigan Department of Environment, Great Lakes and Energy (EGLE), United States Forest Service (USFS), and local conservation groups
	Continue monitoring river and impoundment water temperatures	Consumers Energy coordinates this with local community and government regulatory officials including the USFWS and the DNR
	Continue communications with community stakeholders	Consumers Energy negotiates with new owners about how they will address community needs and provide information about ongoing recreational opportunities
	Continue to monitor and control invasive species	Purchase agreement should include provisions such as boat cleaning stations for managing invasive species in river and impoundment
Ensure that waterfront property ownership and leases remain unchanged and that private businesses can expand	Protect current property values and business viability	Buyer should develop a transition plan that fully addresses property values and business viability
	Maintain property lease agreements at least until 2034 and offer first right of refusal to current property leasers	Consumers Energy addresses this in negotiated PPA and sale agreement
Ensure property tax and other revenue is maintained to help support local units of government and schools	Ensure that energy efficiency credits don't drive new owner initiatives	Consumers Energy should address this in negotiated PPA and sale agreement
	FERC land should remain unchanged	Consumers Energy should address this in negotiated PPA and sale agreement

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Maintain large undeveloped parcels for diverse wildlife habitat and recreational use	Develop a recreation plan that includes opportunities to expand and link public trails and river access	Consumers Energy initiates development of a recreational plan task force that will include environmental nonprofit organizations, EGLE, USFS, local conservation groups, local government officials, and public and private stakeholders
	Study the river before the dams were built to identify new land emerging that can/should remain publicly accessible In addition, a field-based study of current conditions would be needed	Consumers Energy ensures that a decommissioning team of environmental engineers and associated public and private professionals is in place to conduct a formal field-based environmental study to describe the current river/impoundment environment and to recommend how re-emerging bottomlands should be integrated and managed This study should also include environmental impacts and recommendations if Tippy Dam is removed downriver
	Develop a habitat management plan to address recreation, land use, environment, and need for re-establishment of native plants	The formal field-based environmental study described above should include habitat management recommendations
Transition from impoundment-based activities to flowing river-based with increased year-round recreational opportunities	Ensure Americans with Disabilities Act (ADA) access in public campgrounds and other new recreation opportunities	The recreation plan referenced above should address ADA
	Develop a nature center associated with the upper Manistee state-recognized scenic river status and North Country Trail to increase traffic to this area and educate about the transition and impact on the ecology of the river system	The recreation plan referenced above should include recommendations on potential leadership and funding for development of a nature center
	Increase paddle sport access and expand all water-based recreational activities and opportunities	Consumers Energy, in conjunction with the recreational plan task force, will need to collaborate with area chambers and visitors bureaus, to conduct a data study comparing recreational opportunities and economic impacts before and after dam removal to determine increases/decreases and changes in recreational uses
	Explore funding opportunities for recreational enhancements and business transitions	The recreational task force including Consumers Energy and all associated conservation, recreational, environmental, economic development, government and chamber and visitors bureau entities will need to collaboratively explore all public and private funding opportunities for recreation and business development This group should also identify endowment funding opportunities through Consumers Energy—and potentially others—to support affected business owners during transition
	Market new opportunities broadly	Comprehensive marketing planning should be included in any recreational plans that are developed

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Assist affected businesses with transition from dam-based economy to river-flowing economy	Grants/loans will be needed to support businesses affected by the changes	Consumers Energy should consider providing economic remuneration during transition
	Transition to development of a business assistance network with broad-ranging resources	The above-referenced recreational plan task force should initiate collaboration with the Michigan Office of Rural Prosperity, Small Business Development Centers (SBDCs), area chambers of commerce and visitors bureaus, economic development organizations, and local governments to address financial needs of existing businesses
Maintain or increase property tax base	Study the amount of property that could be developed versus land left undeveloped for wildlife habitat and recreation Determine what portion of land needs to be private to maintain taxable value Ensure that floodplain will feature new grasslands and flora Conduct analysis of funding mechanisms	Consumers Energy initiates development of a post-dam property management planning committee including county and township representatives, private lease and campground owners, and others who are determined to be key stakeholders
	During transition, help existing businesses, schools, and municipalities that rely on this tax base for operations	Plans referenced above should address this and seek funding through Consumers Energy, State of Michigan, etc.
	Use proven and effective local zoning ordinances as a model	Property management planning committee should address this and define and clarify ownership options for land exposed after impoundment drains
Address environmental and infrastructure issues	Develop a habitat restoration plan, and ensure proper sedimentation stabilization	Need a cost analysis and commitment from Consumers Energy to restore habitat and address issues related to built-up sediment traveling downstream
	Ensure that invasive species concerns are addressed	The decommissioning team identified above should address invasive species mitigation Partners should include the Conservation Resource Alliance and other NPO stakeholders
	Develop a plan for the restoration of cold-water fisheries	Decommissioning planning should include Trout Unlimited, Michigan DNR Fisheries Division, Little River Band of Ottawa Indians, etc.
	Ensure that wildlife corridors remain when land use shifts	Include in above-referenced recreational and environmental management plans

Tippy Dam

Outdoor Recreation; Habitat; Property Taxes and Revenue; Public Safety

A priority for the group is the maintenance of existing recreation assets as well as improving and expanding access to the river. **Connecting trails and developing nonmotorized river recreation** opportunities was identified across all three scenarios. In the event of decommissioning, members identified the need for a broader transition from impoundment-based activities to river-based activities with increased year-round opportunities. Exhibit 17 shows the location of Tippy Dam, the impoundment, and surrounding property owned by Consumers Energy.

The group identified the Manistee River fishery as a key asset to the region. River and impoundment water temp monitoring are essential while the river hydro remains. **Cold-water fishery restoration** was identified as a priority under a decommissioning scenario.

Wildlife habitat and unique species management was prioritized by the group in its vision of prosperity. Across all three scenarios, group members seek to **conserve large tracts of undeveloped land as wildlife habitat and corridors, accelerate research related to the bat hibernaculum, maintain a sea lamprey barrier, and continue lampricide treatment.** In event of a sale, they prioritize continued access to Tippy Dam to continue lampricide treatments and flow consistency.

Public safety in relation to maintenance of the river hydro and impoundment are another priority for the group. In a sale scenario, a new owner's ability to safely maintain the facility is a concern, so the group suggests a private owner be held to the same standards of regulation as Consumers Energy. Further, group members expressed concerns about whether a new owner will seek relicensing with FERC once the current license expires. In a decommissioning scenario, the safety concerns associated with a failure would be removed.

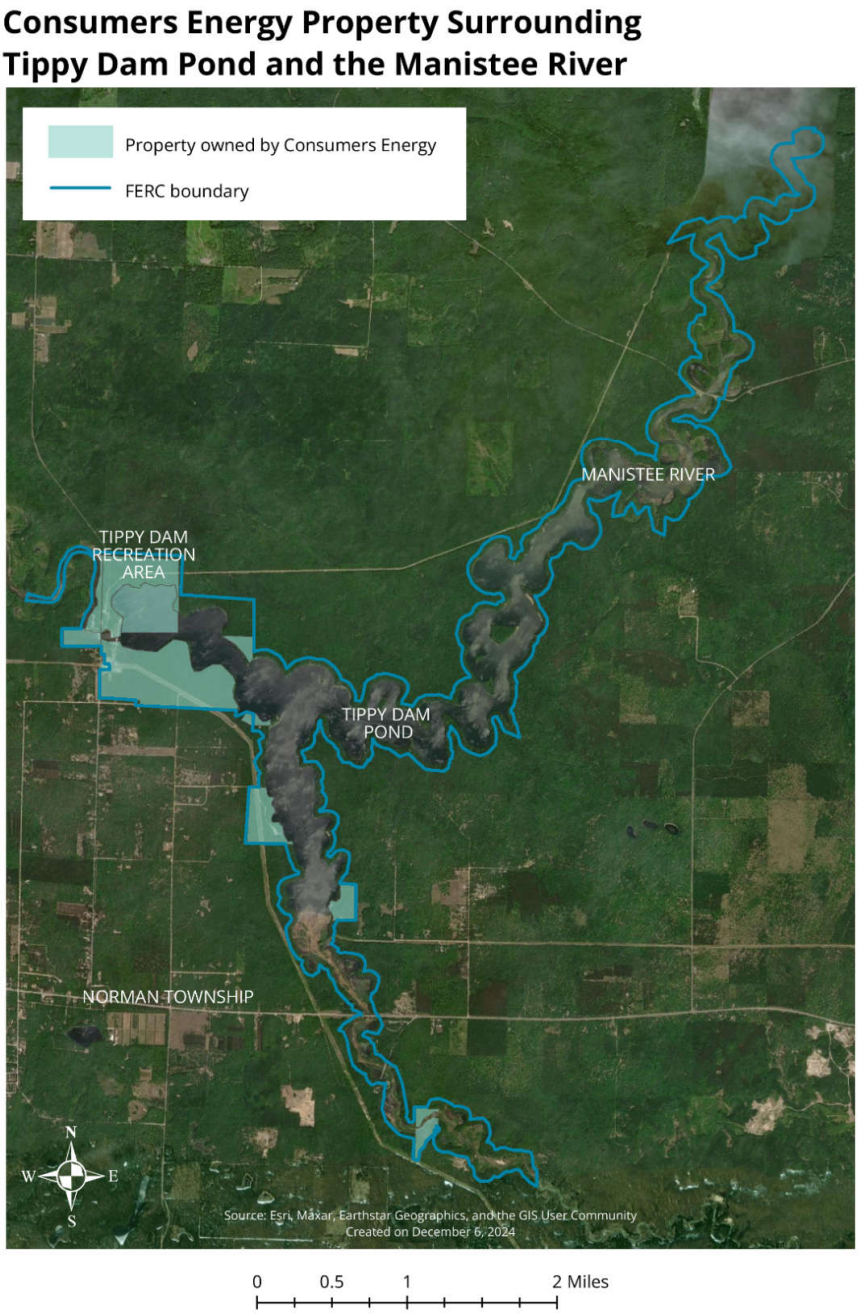
Local units of government and the school districts are supported, in part, by the property tax revenue they receive from Consumers Energy owning land along the impoundment and river. Group members support **ensuring property tax and other revenue is maintained** under a relicensing scenario and a sale scenario. Under a decommissioning scenario, group members suggested **a shift in the tax base** could occur if previously submerged lands are sold to private entities or developed. In addition, they envision developing a plan for growth by **increasing internet connectivity and building affordable housing units.**

Representatives from these groups participated in the prosperity group:

- Alliance for Economic Success
- Bear Lake Schools Districts
- Big Bear Sportsman's Club
- City of Manistee
- Conservation Resource Alliance
- Consumers Energy
- DNR Fisheries
- Great Lakes Fishery Commission
- Kaleva Norman Dickson Schools
- Little River Band of Ottawa Indians

- Loomis Landing Camping and Boating
- Manistee County Commission
- Manistee Economic Development Corporation
- Manistee Tourism Authority
- Maple Grove Township
- Michigan House of Representatives District 104
- Michigan Hydro Relicensing Coalition
- Michigan Trout Unlimited
- Norman Township
- Public Sector Consultants
- United Way of Manistee County

EXHIBIT 17. Consumers Energy Property Surrounding Tippy Dam and Pond and the Manistee River



The Manistee River: Tippy Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 18.

EXHIBIT 18. Manistee River: Tippy Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Maintain and grow recreational assets relative to diversity of waterways	Look at ways to improve and increase access to the river, including Americans with Disabilities Act (ADA) accessibility Increase access points on public-use land	Consumers Energy working with partners – State of Michigan, United States Forest Service (USFS), Little River Band of Ottawa Indians, etc.
	Address water temperature issue. Continue monitoring river and impoundment water temperatures	Consumers Energy in cooperation with partners like the Michigan Department of Natural Resources (DNR), United States Fish and Wildlife Service (USFWS), Trout Unlimited (TU), and others Increase tree planting for shade
	Improve access and parking at Red Bridge	Consumers Energy, DNR, other partners
	Improve Red Bridge boat launch with boat washing stations	Consumers Energy, DNR, other partners
Current wildlife habitat is unchanged, and the bat hibernaculum in the dam spillway remains	Accelerate research and increase funding related to bat hibernaculum	Continue to work with partner agencies, including the Ecological Services Program of the USFWS, and educational institutions to ensure healthy hibernaculum for bats
	Large tracks of undeveloped, public-use land are recognized and held as wildlife habitat and corridors	
Maintain dam safety and long-term viability	Consumers Energy will maintain their high safety standards	Partner with the Army Corp of Engineers Conduct routine safety inspections, drills, and exercises with partner agencies
	Consumers Energy will maintain the aging infrastructure according to Federal Energy Regulatory Commission (FERC) relicensing requirements	Consumers Energy and regulatory commission
Taxable values remain stable	FERC lands remain as is	
	Ownership of bottomlands needs to be identified	Consumers Energy / regulatory commission determine during relicensing
Sea lamprey barrier remains, also stopping other invasive species	Maintain sea lamprey mitigation system. Continue to provide access for lampricide treatment	Consumers Energy commits to providing access to partners for treatment and prevention of invasive species
	Tippy Dam is maintained as an effective barrier for other invasive species (invasive carp, etc.)	Consumers Energy maintains

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
	Put in boat cleaning stations at launch sites	Consumers Energy with partner agencies like DNR, USFWS, tribe, local invasive species prevention coalitions
	Work to control invasive species in Tippy Dam backwaters (e.g., zebra mussels and other invasives)	Consumers Energy with partner agencies like DNR, USFWS, tribe, local invasive species prevention coalitions

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Maintain and grow recreational assets relative to diversity of waterways	Access to the river must be maintained with new hydro facility ownership	Put provisions in the power purchase agreement (PPA) for maintenance and enhancements of existing access points (if included in sale)
	Need to address water temperature issue Continue to monitor river and impoundment water temperatures	New owners in cooperation with partners like DNR, USFWS, TU, and others Increase tree planting for shade
Current wildlife habitat is unchanged, and the bat hibernaculum in the dam spillway remains	Oversight for threatened species (bats) remains	Put provisions in the PPA for broad compliance with concerns
	Accelerate research and increase funding related to bat hibernaculum	Continue to work with partner agencies and educational institutions to ensure healthy hibernaculum for bats
	Large tracks of undeveloped, public-use land are recognized and held as wildlife habitat and corridors	
Taxable values remain stable	FERC lands remain as is	New owner keeps FERC land and pays taxes
	Large tracks of undeveloped, public-use land are recognized and held as wildlife habitat and corridors	

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Sea lamprey barrier remains, also stopping other invasive species	The dam is maintained as an effective barrier through the development of a memorandum of agreement (MOA) or memorandum of understanding (MOU) with the purchaser	MOA/MOU is a term of sale
	Continue to provide access to the dam after the sale to continue treatments and flow consistency	Work with partners agencies like TU, Great Lakes Fisheries Coalition, State of Michigan DNR Fisheries, etc.
Dam safety and long-term viability is maintained	Contract terms must address safe operations and long-term structural integrity of the dams	Consumers Energy should negotiate terms of sale for safe long-term operations and the longest possible PPA At a minimum, PPA should extend to end of license agreement
	PPA includes same/similar safety and maintenance requirements as current owner (Consumers Energy) for future owners	Regulatory commission with public input
	Financial (long-term) viability and assurances are required No shell companies	Consumers Energy does due diligence Regulatory agencies review
	Assure stakeholders that funding for dam maintenance and upgrades is covered in purchase agreement	Consumers Energy is responsible for communicating and assuring public of the long-term stability of the dam and subsequent maintenance and operations
	Ongoing stakeholder communication is important	Buyer is directed to attend local government meetings periodically to update about operations and financials

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Transition from impoundment-based activities to flowing river-based with increased year-round recreational opportunities	Put in place a four-season recreational trail system and river navigation plan with access sites and launches Increase connectivity across the river with pedestrian and recreational crossings Expanded ecotourism (fishing, hiking, paddling)	Consumers Energy initiates development of a recreational plan task force that will include Michigan Department of Environment, Great Lakes and Energy; USFS, conservation, tourism, and environmental groups; local government officials, and public and private stakeholders Funding through Michigan Natural Resources Trust Fund, Consumers Energy, etc.
	Develop a transition plan for businesses that will be forced to change and adapt to new river system Consider economic incentives	Consumers Energy to provide financial resources for transition. Grants/loans will be sought to support businesses affected by the change

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
	Develop a marketing plan to address new opportunities	Partner agencies (local stakeholders), funded through Consumers Energy, local, and other funding sources
The bat hibernaculum remains intact while research continues to discover why these bats are thriving	Accelerate research funding and testing for hibernacula	Consumers Energy continues to work with partner agencies and educational institutions to ensure healthy hibernaculum for bats
	Investigate option for leaving spillway intact to allow for river flow while maintaining bat hibernaculum	
Maintain or increase property tax base **Develop a master plan for land use of bottomlands and other areas no longer owned by Consumers Energy**	Study the amount of property that could be developed versus land left undeveloped for wildlife habitat and recreation Determine what portion of land needs to be private to maintain desired taxable value level Conduct analysis of funding mechanisms	Consumers Energy to initiate the development of a post-dam property management planning committee with township representatives and other local stakeholders Investigate ways to maintain large undeveloped wildlife corridors Use proven and effective local zoning ordinances as a model Plan must define and clarify ownership options for land exposed after impoundment drains
	During transition, provide monetary assistance to existing schools and municipalities that rely on this tax base for operations.	Plans should address this and seek funding through Consumers Energy, State of Michigan, etc.
Plan for growth: High-speed internet and new housing units	Increase connectivity to internet People are reluctant to move to an area with no connectivity	Consumers Energy leads efforts to plan with local, statewide, and regional partners to bring connectivity to rural areas Put pressure on county, local, and state government to find ways to make this affordable and priority for internet providers
	Build new (affordable) housing units to bring more people into the area	Consumers Energy continues to work with Housing North as an advocate and possible funder of housing development initiatives Investigate ways to increase housing capacity in rural areas of Manistee County
Create and build opportunities to increase wildlife habitat, fisheries, and invasive species barriers	Develop a habitat restoration plan Floodplain will feature new grasslands and flora	Need a cost analysis and commitment from Consumers Energy to restore habitat. Address issues related to built-up sediment traveling downstream
	Barrier to sea lamprey and other invasives must remain	Decommissioning plans should include barrier details, location, and terms defining responsibilities
	Ensure that wildlife corridors remain when land use shifts	Maintain undeveloped hunting and wildlife corridors

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
	Develop a plan that includes cold water fisheries Address the concern of nonnative fish moving upstream, competing with smaller native fish	Consumers Energy provides support for the creation of oversight committee Include resources to create natural features that help ensure cold-water stream Partners include TU, Michigan DNR Fisheries, Little River Band of Ottawa Indians, etc.

Muskegon River

One prosperity group with three subgroups formed to discuss the three river hydros on the Muskegon River: Rogers Dam; Hardy Dam; and Croton Dam. Omni Tech International provided facilitation services to this group.

Rogers Dam

Outdoor Recreation; Habitat; Property Owner Satisfaction; Public Safety

Maintaining and expanding outdoor recreation opportunities is a priority across all three scenarios. Regardless of the future of the dam, the group would like a **recreational master plan that prioritizes maintaining public access to the river/impoundment, adding additional canoe/kayak launch sites, and adding more trails and trail infrastructure.** In particular, the group wants to connect the river trail in Big Rapids to the Dragon Trail at Hardy Dam. The group would also like local governments to be enabled to manage and maintain both existing and future recreational sites, either through a land transfer or a legal agreement like a memorandum of understanding (MOU).

The group also agreed that quality wildlife habitat is essential to the prosperity of the region. **Maintaining the health of the fishery, protecting wildlife habitat (e.g., through conservation easements), and enhancing current habitat (e.g., by adding osprey towers and bat houses)** are priority actions that were identified across all three scenarios. If the dam is decommissioned, the group would like Consumers Energy to work with natural resource management organizations to identify and pursue opportunities for habitat enhancement as part of the dam removal process.

Property owner satisfaction is another priority for the group. **Frequent, accessible, transparent, and honest communication with property owners** will be important to maintaining property owner satisfaction regardless of the decision made. Additionally, especially in the event of dam removal, ensuring adjacent property owners continue to have water access would help maintain property owner satisfaction. Exhibit 19 shows the location of Rogers Dam, the impoundment, and surrounding property owned by Consumers Energy.

Finally, public safety was identified as a community priority. If the dam remains, either under ownership by Consumers Energy or another entity, the group wants to see **continuous upgrades and investments in dam safety measures.** If the dam is removed, a priority for the group is the development of a plan to **shift resources that are currently allocated to dam management/safety to river safety measures** (e.g., dive training for first responders).

Representatives from these groups participated in the prosperity group:

- City of Big Rapids
- Consumers Energy
- Big Rapids Public Schools
- Big Rapids Township
- Fremont Area Community Foundation
- Great Lakes Fishery Commission
- Homeowners association (HOA) representatives

- Mecosta County
- Mecosta County Parks
- Mecosta Township
- Michigan Hydro Relicensing Coalition
- Michigan Chapter of Trout Unlimited
- Muskegon River Watershed Assembly
- Newaygo County Road Commission/ Administration
- Office of State Representative Joseph Fox

EXHIBIT 19. Consumers Energy Property Surrounding Rogers Dam and Pond and the Muskegon River



The Muskegon River: Rogers Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 20.

EXHIBIT 20. Muskegon River: Rogers Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Continue to build upon current recreational assets to maintain and grow tourism and ensure that it remains as is or better	Maintain public recreational access at the dam site	Develop a recreational master plan that includes these priorities
	Add canoe launch on the west side of the dam	
	Add a nature center/pavilion near the river where community can gather and learn about the river, etc.	
	Connect the river trail in Big Rapids with the Dragon Trail at Hardy Dam	
	Enable local governments to manage the recreation sites	Land transfer/memorandum of understanding (MOU) between Consumers Energy and local governments
Ensure property values continue to hold their value	Maintain pond-based recreational opportunities	Ensure property owners continue to have recreational access
	Maintain aesthetic value of the pond	Consumers Energy protects water quality, removes trash, supports invasive species management
Ensure that the community does not have to worry about a long-term buyer plan	Maintain frequent and accessible communication with the community regarding dam operations and future plans	Hold public meetings Post more/better social media posts (especially on Facebook) Partner with local organizations to reach community members (e.g., through postcards)
	Be transparent and honest with the community	Send Consumers Energy representatives to local township meetings to answer questions/give updates; communicate timelines and deadlines and stick to them
Continue to maintain high satisfaction levels with property owners	Public engagement	Develop a public engagement strategy that includes public meetings; send mailers to ALL adjacent property owners to notify of meetings
	Maintain water levels satisfactory to property owners	
	Ensure safe operation of the dam	Continue to apply for grants and loans to support dam safety
Maintain/ improve current wildlife habitats	Add bird habitat (e.g., osprey towers)	Engage with the Michigan Department of Natural Resources (DNR) and Michigan Department of Environment, Great Lakes, and Energy (EGLE) for consultations to ensure best practices; seek funding to support habitat enhancement
	Add bat houses	
	Manage the sediment to ensure it does not negatively impact wildlife	

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
	Protect wildlife habitat in and around the dam	Enter into conservation easements with landowners
	Maintain the fishery's health	Engage consultants and experts in the field

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Continue to build upon current recreational assets to maintain and grow tourism and ensure that it remains as is or better	Maintain public recreational access at the dam site	Develop a recreational master plan that includes these priorities
	Add canoe launch on the west side of the dam	
	Add a nature center/pavilion near the river where community can gather and learn about the river, etc.	
	Connect the river trail in Big Rapids with the Dragon Trail at Hardy Dam	
	Enable local governments to manage the recreation sites	Negotiated as part of the sale agreement between Consumers Energy and the buyer
Ensure property values continue to hold their value	Maintain pond-based recreational opportunities	Ensure property owners continue to have recreational access
	Maintain aesthetic value of the pond	New owner protects water quality, removes trash and debris, supports invasive species management
Ensure that the community does not have to worry about a long-term buyer plan	Dam owner maintains frequent and accessible communication with the community regarding dam operations and future plans	Hold public meetings Post more/better social media posts (especially on Facebook) Partner with local organizations to reach community members (e.g., through postcards)
	New owner is transparent and honest with the community	Send representatives to local township meetings to answer questions/give updates Communicate timelines and deadlines and stick to them
	Share facts and data (especially financial) with community to help them understand reasons for ownership	Provide clear information about company background and intentions
Continue to maintain high satisfaction levels with property owners	Public engagement	Consumers Energy and new owner develop a public engagement strategy that includes public meetings
	Maintain water levels satisfactory to property owners	
	Ensure safe operation of the dam	Build funding for dam maintenance and upgrades into the power purchase agreement

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
	Provide assurance that the dam will not be sold in the next 30 years	Requirement of the sale agreement
Maintain/ improve current wildlife habitats	Add bird habitat (e.g., osprey towers)	Engage with DNR/EGLE for consultations to ensure best practices
	Add bat houses	
	Manage the sediment to ensure it does not negatively impact wildlife	Seek funding to support habitat enhancement
	Protect wildlife habitat in and around the impoundment	Enter into conservation easements with landowners; include provision in sale agreement that requires new owner to maintain habitat
	Maintain the fishery's health	Engage consultants and experts in the field

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key actions**	**Launch step**
Build upon the added recreational land, shifting tourism to more land and river-based activities	Provide local government land to develop new recreational facilities	Transfer Consumers Energy–owned parcels to local governments and/or negotiate management/maintenance MOUs with local governments
	Ensure/maintain public river access points	Develop a recreational master plan that includes these priorities
	Connect the river trail in Big Rapids with the Dragon Trail at Hardy Dam	
	Install ADA-accessible canoe/kayak launches on the west side of the river	
	Secure funding for design, engineering, and implementation of new recreational facilities	Consumers Energy helps local governments seek funding and also provides funding to support new recreational facilities
Develop a plan to shift management/ funding for dam emergencies to other opportunities	More training for government officials and first responders	Consumers Energy could provide/sponsor dive training and rope training opportunities
	Ensure access to river in case of emergency	Develop infrastructure (e.g., roads) and easements to allow emergency access
	Move/install fire hydrants	Work with local governments to determine how and where to locate fire hydrants
	Create a new river safety fund using monies that were previously allocated to dam safety	Consumers Energy creates fund

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key actions**	**Launch step**
Develop a comprehensive plan for managing sediment	Share the sediment management plan with the community so they understand what to expect	Meet with the community during the development and implementation of the plan to answer questions and address concerns
	Remove toxins/contaminated sediment and dispose of safely	Conduct study to identify areas with contaminated sediment
Take actions to increase property owner satisfaction	Ensure property owners continue to have water access	Don't allow developer to buy currently undeveloped land; offer portions of bottomlands to owners for access
	Define property lines	Provide free legal advice for property owners regarding property boundaries
	Ensure safety of residents	Invest in river safety measures
	Prioritize open and transparent communication with property owners	Develop a comprehensive communication plan that ensures timely and transparent communication before, during, and after the dam removal process
Continue to create and build upon opportunities to increase nature-based tourism	Protect water quality	Work with local watershed organizations and other actors to implement water quality protection measures
	Explore opportunities to educate community about dam removal	Partner with educational institutions (e.g., Ferris State University, K–12 district) to develop curriculum and interpretive signage
	Enhance habitat for fish and other aquatic organisms	Work with natural resource management organizations to identify and pursue opportunities for habitat enhancement as part of the dam removal process
	Market and promote new recreational assets	Develop a marketing and promotion plan

Hardy Dam

Outdoor Recreation; Water Quality Improvement; Tourism

The Hardy Dam prosperity group identified outdoor recreation, water quality, and growing tourism/business opportunities among their top priorities for the community. Exhibit 21 shows the location of Hardy Dam, the impoundment, and surrounding property owned by Consumers Energy.

Maintaining and increasing outdoor recreation opportunities is a key priority identified by group members across all three scenarios. In particular, **continuing to maintain and develop the Dragon Trail and associated infrastructure** is important to the community. If the dam is sold, the group is concerned that a new owner will not honor existing lease/maintenance agreements; therefore, negotiating land transfers and/or establishing long-term leases to ensure the community is able to maintain current access to the Dragon Trail are primary priorities.

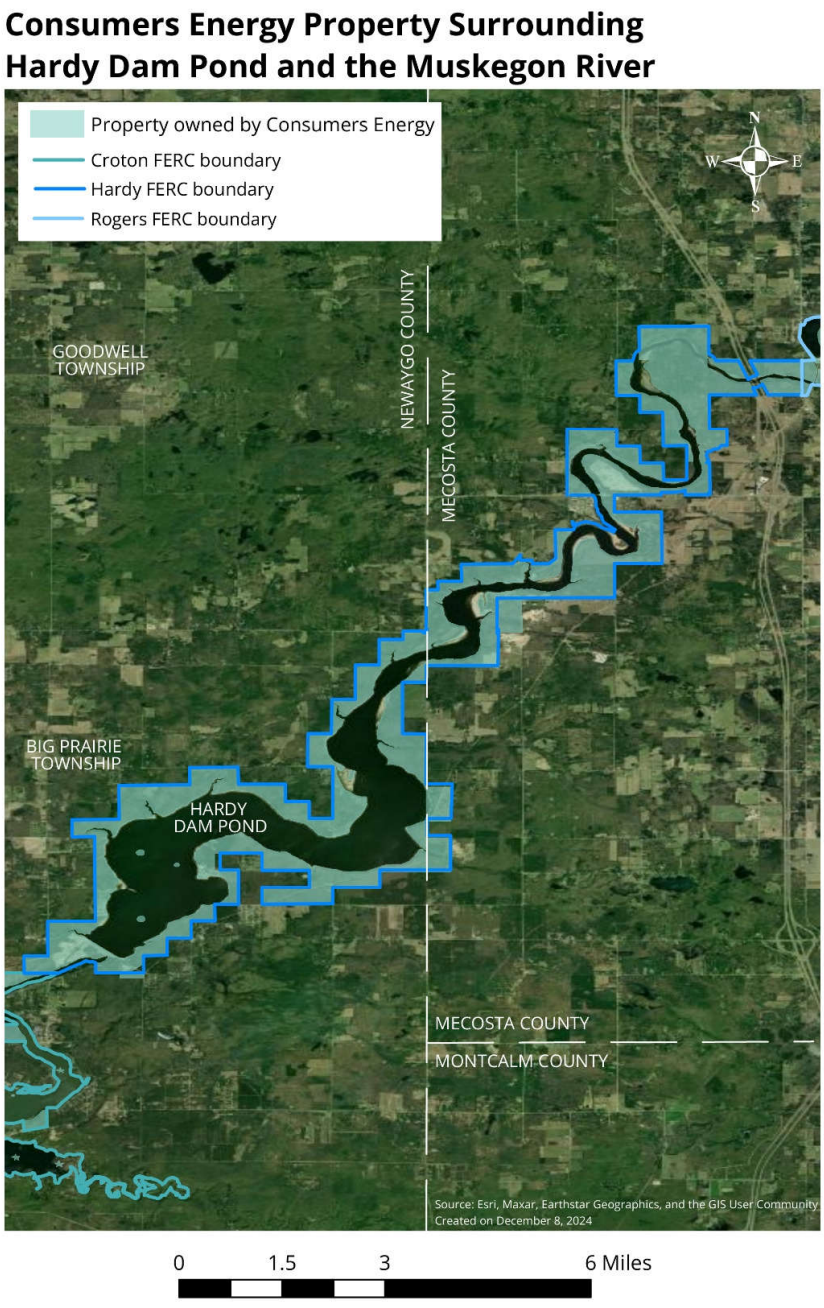
Achieving sustained water quality improvements is another priority articulated by the prosperity group. If the dam remains, either under Consumers Energy or some other entity's ownership, the group would like the owner to reevaluate dam operations with a focus on water quality improvement. This would necessitate consultations with engineers and specialists to identify and evaluate options for alternative dam management techniques. Similarly, if the dam is removed, water quality improvements and habitat restoration are top priorities for the community.

The remaining priorities focused on **growing tourism and becoming a destination community.** Group members prioritized partnering with community organizations to market and promote recreational activities and events and developing and executing a comprehensive marketing strategy across Newaygo and Mecosta Counties. If the dam is removed, **creating and implementing a redevelopment plan centered around land- and river-based recreation and tourism** is a top priority.

Representatives from these groups participated in the prosperity group:

- City of Big Rapids
- Consumers Energy
- Big Rapids Public Schools
- Big Rapids Township
- Fremont Area Community Foundation
- Great Lakes Fishery Commission
- Homeowners association (HOA) representatives
- Mecosta County
- Mecosta County Parks
- Mecosta Township
- Michigan Hydro Relicensing Coalition
- Michigan Chapter of Trout Unlimited
- Muskegon River Watershed Assembly
- Newaygo County Road Commission/ Administration
- Office of State Representative Joseph Fox

EXHIBIT 21. Consumers Energy Property Surrounding Hardy Dam and Pond and the Muskegon River



The Muskegon River: Hardy Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 22.

EXHIBIT 22. Muskegon River: Hardy Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Increase recreational opportunities and continue to develop Dragon Trail/trail head camp sites	Maintain existing lease agreements, keeping lease costs low	Consumers Energy maintains existing lease agreements
	Support grants for park infrastructure and improvement	Consumers Energy considers setting up a grants program for park infrastructure improvements that promote and expand recreational activities
	Improve portages	Consumers Energy supports design and installation of portages
	Continue to maintain undeveloped parcels	Consumers Energy supports maintenance of undeveloped parcels
Achieve sustained water quality improvements	Invest in operational changes to send cold water to Croton Dam Pond	Consumers Energy invests in operational changes to send cold water to Croton Dam Pond
	Reevaluate dam operations, with a focus on water quality improvement	Consumers drafts and agrees on new operational agreements Consultations with engineers/specialists to evaluate options for operational techniques that can be applied to help lower water temperatures
	Reevaluate dam operations, with a focus on water quality improvement	Reevaluate dam operations, with a focus on water quality improvement
Increase growth and stability of existing businesses, create new opportunities	Partner with community to market recreational activities/events	Consumers Energy offers support through sponsorships of events and volunteers
	Create marketing campaigns across Newaygo and Mecosta Counties	Newaygo and Mecosta Counties Tourism Councils create and execute a marketing strategy
	Maintain public access	Consumers Energy maintains all public easements
	Sell unrestricted property to public or private parties	Consumers Energy could consider sale of unrestricted property to public or private party
Expand efforts to become a destination community by focusing on real estate development and additional recreational opportunities	Provide more waterfront access and space to build, while protecting undeveloped land	Consumers Energy could consider selling a small percent of land for development with waterfront access and/or Consumers Energy could engage in long-term (>12 months) leases
	Promote hunting, biking, and other land-based recreational activities	Consumers Energy is a partner in promoting recreational opportunities

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
	Key Actions	**Launch Step**
Increase recreational opportunities and continue to develop Dragon Trail/trail head camp sites	Transfer land owned by Consumers Energy to county, townships, or other local bodies	Negotiated prior to license transfer
	Establish long-term lease agreements to foster community commitment, keeping lease costs low	New owner maintains existing lease agreements
	Restrict new owner to a percent of land for development	Negotiated as part of sale agreement
	Support grants for park infrastructure and improvement	Consumers Energy and/or new owner consider setting up a grants program for park infrastructure improvements that promote and expand recreational activities
	Continue to maintain undeveloped parcels	New owner supports maintenance of undeveloped parcels
Achieve sustained water quality improvements	Invest in operational changes to send cold water to Croton Dam Pond	New owner invests in operational changes to send cold water to Croton Dam Pond
	New owner establishes dam operational agreements, with a focus on water quality improvement	New owner drafts operational agreements Consultations with engineers/specialists to evaluate options for operational techniques that can be applied to help lower water temperatures
	Address algae bloom	New owner implements techniques that promote cold water mixing, reducing hot surface water
Increase growth and stability of existing businesses, create new opportunities	Partner with community in marketing recreational activities/events	New owner offers support through sponsorships of events and volunteers
	Create marketing campaigns across Newaygo and Mecosta Counties	Newaygo and Mecosta Counties Tourism Councils create and execute a marketing strategy
	Maintain all public easements and lease agreements	Consumers/New Owner ensure the Dragon Trail trailhead is deeded to counties
	Employment training for youth, preserving our environment (high school and college)	Consumers Energy could consider using a percentage of the sale proceeds to support an education fund for high school and college students job training or studying environmental preservation
Expand efforts to become a destination community by focusing on real estate development and additional recreational opportunities	Provide more waterfront access and space to build, while protecting undeveloped land	Consumers Energy/new owner could consider selling a small percent of land for development with waterfront access and/or could engage in long-term (>12 months) leases
	Promote hunting, biking, and other land-based recreational activities	Consumers Energy/new dam owner are partners in promoting recreational opportunities

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key Actions**	**Launch Step**
Maintain and expand recreational opportunities	Create recreational endowment fund to support projects such as a rustic camp area, expanded trail system, and ORV park/trail	Consumers Energy leads the creation of the fund
	Create a business development fund	Consumers Energy leads the creation of the fund
	Maintain undeveloped parcels	Consumers Energy supports maintenance of undeveloped parcels
	Local control to manage "new property" created during removal This includes but is not limited to assessments, surveying, and plotting of properties	Surveying costs supported by Consumers Energy
Restore cold water sturgeon fishery, fish migration	Develop a habitat restoration plan that includes restocking and long-term fish management	Consumers Energy pays for all costs as part of a planned dam removal process
	Activate sediment mitigation study	
	Address algae bloom	
Stability of existing businesses and creation of new opportunities	Create recreational endowment fund	Established by Consumers Energy prior to decommissioning
	Create a business development fund	Established by Consumers Energy prior to decommissioning
Rebrand the community as a destination community focused on nature/land appreciation	Add more waterfront access and space to build while protecting undeveloped land	Consumers Energy deeds land with waterfront access to counties
	Promote hunting, biking, and other land-based recreational activities	Consumers Energy is a partner in promoting redevelopment plan and economic funding
	Perform hazard assessment for impact of dam removal on infrastructure, homes, and businesses	Consumers Energy is financially responsible for reimbursement of assessment and impact costs

Croton Dam

Improving Water Quality; Habitat; Outdoor Recreation; Public Safety; Tourism Marketing

The Croton Dam prosperity group identified water quality and wildlife habitat, outdoor recreation, public safety, and tourism development among their top priorities for the community. Exhibit 23 shows the location of Croton Dam, the impoundment, and surrounding property owned by Consumers Energy.

Improving and enhancing water quality and wildlife habitat is a priority under all three scenarios. If the dam remains, investing in water quality improvement measures that would help **cool the water downstream, address algae blooms, and reduce the spread of invasive species like sea lamprey** are key priorities. If the dam is removed, maintaining a sea lamprey barrier is a key action identified by the group.

Further developing outdoor recreation opportunities is a clear priority for the prosperity group under all three scenarios. Enhancing and improving the quality and accessibility of the existing trail system and adding more canoe/kayak launches are key actions identified by the group. If the dam is removed, the community would like Consumers Energy to be a partner in developing a comprehensive transition plan that prioritizes adding more trails and expanding river-based recreational opportunities.

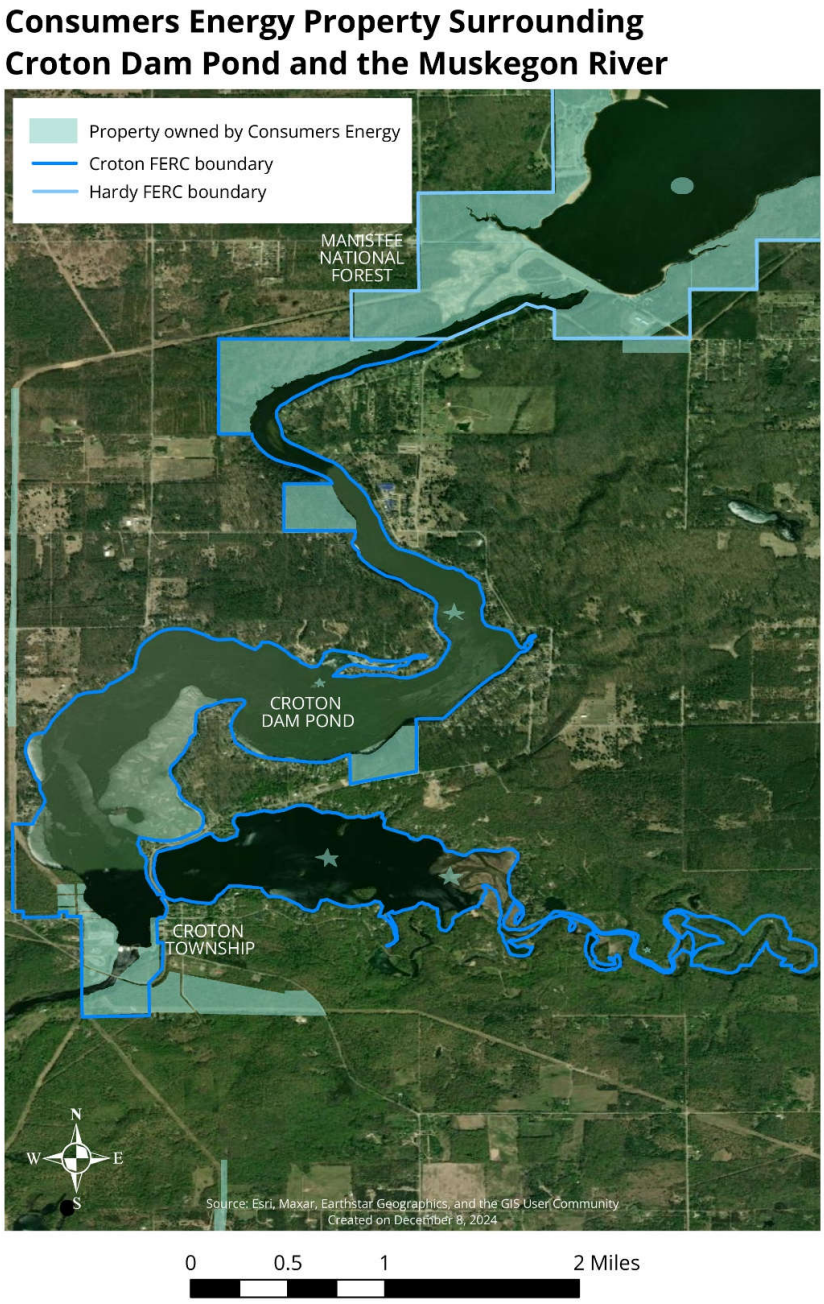
Public safety is a third priority articulated by the group. If the dam remains, sustained investments in dam safety will be critical to ensure community satisfaction. It was made apparent that the community has many concerns about a new owner as compared to continuing with Consumers as the owner. The community is worried that a new owner will not prioritize dam safety and will put the community in danger.

Finally, the group felt that marketing the area as a year-round tourism destination would help boost the community's prosperity. Developing a plan to **market and promote recreational and tourism opportunities** is a priority for the group. Depending on the decision made, the types of recreational opportunities promoted would vary (i.e., more pond-based activities vs. more river-based activities).

Representatives from these groups participated in the prosperity group:

- City of Big Rapids
- Consumers Energy
- Big Rapids Public Schools
- Big Rapids Township
- Fremont Area Community Foundation
- Great Lakes Fishery Commission
- Homeowners association (HOA) representatives
- Mecosta County
- Mecosta County Parks
- Mecosta Township
- Michigan Hydro Relicensing Coalition
- Michigan Chapter of Trout Unlimited
- Muskegon River Watershed Assembly
- Newaygo County Road Commission/ Administration
- Office of State Representative Joseph Fox

EXHIBIT 23. Consumers Energy Property Surrounding Croton Dam and Pond and the Muskegon River



The Muskegon River: Croton Dam prosperity group's priorities for the three scenarios, key actions to advance the priorities, and launch steps for those actions are presented in Exhibit 24.

EXHIBIT 24. Muskegon River: Croton Dam Group Prosperity Plan

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Further develop tourism and resident attractions (plan more events that draw in tourists; further develop trail system; improve tourism infrastructure)	Develop a comprehensive lake/watershed management plan to address and improve water quality issues - Identify solutions to cool the water downstream - Identify solutions to address algae blooms - Develop/implement a sediment management plan	Consumers Energy provides support for the development of the lake/watershed management plan - Support for new technologies to help cool the water downstream - Support to help develop the sediment management plan (subset of lake/watershed management plan)
	Enhance/improve the quality and accessibility of the existing trail system - Improve access to trails - Clearly identify and communicate land ownership - Expand/extend existing bike trail and improve overall quality - Enhance existing bridges (biking, walking, viewing site) for safety and accessibility	Consumers Energy helps maintain/improve access to trail system Consumers Energy should consider transitioning the land to public entity/providing financial support for land management - Form partnership for accessibility to trails (walking and biking) - Consumers Energy actively contributes information on ownership (e.g., signage reflecting ownership)
	Expand/market current and future recreational opportunities - Focus on campaign for quiet season - Market as a four-season destination - Expand marketing of events	Consumers Energy provides information/data and partners with local chambers of commerce / economic development organizations to increase messaging and marketing
	Improve accessibility to water activities - Install Americans with Disabilities Act (ADA) accessible kayak launches	Partnership with Consumers Energy and other entities to fund accessibility

Scenario One: Consumers Energy Seeks Relicensing		
Priority	**Key Actions**	**Launch Step**
Develop/ communicate a proactive decommissioning and community and economic transition plan	Develop a long-term full facilities lifecycle plan that includes maintenance and eventual decommissioning (comprehensive version of what is being done now)	Consumers Energy develops/communicates plan and updates regularly
	Establish monetary resources (e.g., a trust) to help with future community and economic transition	Consumers Energy should consider providing monetary supports

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
Further develop tourism and resident attractions (plan more events that draw in tourists, further develop trail system, improve tourism)	Develop a comprehensive lake/watershed management plan to address and improve water quality issues - Identify solutions to cool the water downstream - Identify solutions to address algae blooms - Develop/implement a sediment management plan	New owner provides support for the development of the lake/watershed management plan - Support for new technologies to help cool the water downstream - Support to help develop the sediment management plan (subset of lake/watershed management plan)
	Enhance/improve the quality and accessibility of the existing trail system - Improve access to trails - Clearly identify and communicate land ownership - Expand/extend existing bike trail and improve overall quality - Enhance existing bridges (biking, walking, viewing site) for safety and accessibility	Land transfer to public entity negotiated as part of sale New owner actively contributes information on ownership (e.g., signage reflecting ownership) New owner helps maintain/improve access to trail system - Form partnership for accessibility to trails (walking and biking) New owner considers providing financial support for land management
	Expand/market current and future opportunities - Focus on campaign for quiet season	New owner provides information/data and partners with local chambers of commerce /economic development organizations to increase messaging and marketing

Scenario Two: Consumers Energy Sells and Transfers the License to a New Owner		
Priority	**Key Actions**	**Launch Step**
	- Market as a four-season destination - Expand marketing of events	
	Improve accessibility to water activities - Install ADA-accessible kayak launches	Partnership with new owner and other entities to fund accessibility
Ensure that the sea lamprey barrier continues protecting upper watershed	Maintain current level of support of assets and accessibility (aesthetically pleasing dam, historical structure)	Consumers Energy negotiates with new owner to help support recreational assets and ensure boating boundaries, etc. New owner should consider creating a grant program for improvements
Ensure recreational access to Croton Pond remains for residents and the public	Address leased land issues with property owners (clearly identify scope of land ownership and ensure current landowners have the same access) Recreational/shared assets Lakefront/private ownership	Consumers Energy adds continued access to recreational assets as a condition of sale Transfer ownership of assets (lake front to homeowners, boat launch to public entity or neighborhood association)
	Enhance existing bridges and causeway (biking, walking, viewing site) for safety and accessibility	Support for recreational infrastructure improvements–could be provided by new owner and/or Consumers Energy
Maintain status quo (boating/ fishing, land values, public access, wetland habitats)	Maintain current level of support of assets and accessibility (aesthetically pleasing dam, historical structure)	Consumers Energy negotiates with new owner to help support recreational assets and ensure boating boundaries, etc. New owner should consider creating a grant program for improvements
Develop/ communicate a proactive decommissioning and community and economic transition plan	Develop a long-term plan and future resources (comprehensive version of what is being done now)	New owner develops/ communicates plan and updates regularly Consumers Energy should consider providing supports for new owner in development of plan
	Establish monetary resources (e.g., a trust) to help with future community and economic transition	Consumers Energy/new owner should consider providing monetary supports

Scenario Three: Consumers Energy Decommissions the Dam and the River Is Free Flowing		
Priority	**Key actions**	**Launch step**
Develop plans to recapture and shift resources/time currently spent on dam safety	Develop a sediment management plan	Consumers Energy provides resources and data, develops the plans, and sets up regular comprehensive communication sessions with the community
	Identify and communicate downstream benefits and impacts of dam removal	
	Develop a decommission timeline plan with access to decommission reports/data	
	Clear communication to community on timeline	
	Develop a plan to address sea lamprey	Consumers Energy works with the Great Lakes Fishery Commission and U.S. Fish and Wildlife Service to conduct sea lamprey barrier feasibility studies
Develop an area wide land use plan and opportunities for property expansion (extension of property under former pond)	Maintain waterfront access for owners; transfer property rights to homeowners	Consumers Energy transfers property rights to property owners
	Identify current legal rights of adjacent property	Consumers Energy investigates as part of decommissioning process
	Give community choice for trail expansion; explore option to grant easements for owners	Consumers Energy helps with land use plan/study, including community input on trail expansion options Put plan agreements in place for any options identified; identify if agreements are coordinated by city, county, or some other entity
	Address bottomland ownership issues	Consumers Energy investigates
Build/expand new recreational opportunities (cold water fishery expansion, full river habitat restoration, trail improvement)	Develop a river restoration plan	Consumers Energy provides support for a river management plan that prioritizes river restoration
	Review/improve access points to river	Financial support for access point changes–could be provided by Consumers Energy
	Expand access to paddle sports	Economic development support; equipment purchases
	Develop a coordination plan for where the Little Muskegon River comes into the Muskegon River (water flow, temperature, etc.)	Consumers Energy supports plan development
	Maintain sea lamprey barriers	Support for long-term plan to maintain sea lamprey barriers
Develop/expand new economic drivers and real estate development (as a riverfront asset)	Expand marketing plan for recreational uses (fishing tours, different types of anglers, etc.)	Consumers Energy could provide financial support to develop the plan Consumers Energy could provide grants to recreational business owners
	Provide economic support for businesses to transition	Consumers Energy should consider providing land/opportunities for businesses to expand
	Create a boardwalk	Support for a land use plan; consultants and expertise
	Create a birdwatching station	Financial support–could be provided by Consumers Energy



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STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application of **CONSUMERS ENERGY COMPANY** for approval of the sale of its River Hydroelectric Generating Fleet, related Power Purchase Agreement, and other relief.	)))))))	Case No. U-21985

PROOF OF SERVICE

STATE OF MICHIGAN)
) SS
COUNTY OF JACKSON)

Melissa K. Harris, being first duly sworn, deposes and says that she is employed in the Legal Department of Consumers Energy Company; that on October 31, 2025, she served an electronic copy of the **Redacted Version of Consumers Energy Company's Application and Supporting Testimony and Exhibits of Company witnesses Richard T. Blumenstock, Jason R. Coker, Adam J. Monroe, and Angela Thompkins** upon the persons listed in Attachment 1 hereto, at the e-mail addresses listed therein.

Melissa K. Harris

Subscribed and sworn to before me this 31st day of October, 2025.

Crystal L. Chacon

Crystal L. Chacon, Notary Public
State of Michigan, County of Eaton
My Commission Expires: 05/25/30
Acting in the County of Jackson

ATTACHMENT 1 TO CASE NO. U-21985

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* Receives Confidential Materials