



Silver Maple Solar Project,
Ottawa County, Michigan

Exhibit A-4.5: Summary of Tribal
Engagement

Michigan Public Service Commission
Requirements

APRIL 2026

PREPARED FOR

Silver Maple PV, LLC

353 North Clark Street, 30th Floor
Chicago, Illinois 60654

PREPARED BY

SWCA Environmental Consultants

200 West 22nd Street, Suite 220
Lombard, Illinois 60148

EXHIBIT A-4.5: SUMMARY OF TRIBAL ENGAGEMENT

1. Exhibit A-4.5 – Summary of Tribal Engagement

- i. A summary of tribal engagement, including at a minimum, the communication and outreach conducted with each Tribe, date and time, who participated, and a summary of tribal input and outcomes if applicable.**

Table 1 in **Appendix I, Exhibit A-4.5** provides a summary of tribal engagement including the name of the federally recognized Tribe, contract person, title, date of outreach and response, and summary of tribal input and outcomes. Additionally, a copy of the letter provided to each Tribe is included in **Appendix I, Exhibit A-4.5**. See also, **Appendix II, Exhibit 2**, Direct Testimony of C. McKnight, at p. 20.



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Tribe	Point of Contact	Coordination Description	Coordination Outreach Timeline	Status	Necessary Permits/Approvals/Next Steps
Bay Mills Indian Community	Paula Carrick, Tribal Historic Preservation Officer (THPO) 12140 West Lakeshore Dr. Brimley, MI 49715 906-248-8759 paulacarrick@baymills.org	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by the State Historic Preservation Office (SHPO) for content. No response has been received to date.	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Grand Traverse Band of Ottawa & Chippewa Indians	Aaron Chivis, Cultural Department Manager 2605 N. West Bay Shore Dr. Peshawbestown, MI 49862 231-534-7764 Aaron.Chivis@gtb-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date.	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Hannahville Indian Community, Michigan (Chairperson)	Dustin Meshigaud, Tribal Historic Preservation Office N14911 Hannahville B-1 Rd. Wilson, MI 49896 906-723-2271 dustin.meshigaud@hannahville.org	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date.	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Keweenaw Bay Indian Community (KBIC) of the Lake Superior Band of Chippewa Indians	Paul Halverson, THPO 16429 Bear Town Rd. Baraga, MI 49908 906-353-6623 ext. 4178 phalverson@kbic-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. 01/20/2026: SWCA received email correspondence from Paul Halverson indicating that the KBIC does not wish to participate in the review of the Project.	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.

Tribe	Point of Contact	Coordination Description	Coordination Outreach Timeline	Status	Necessary Permits/Approvals/Next Steps
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan (THPO Director and Chairman)	Alina Shively, THPO P.O. Box 249 Watersmeet, MI 49969 906-358-0137 alina.shively@lvd-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Little River Band of Ottawa Indians	Corey Wells, THPO 2608 Government Center Dr. Manistee, MI 49660 coreyawells@lrboi-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Little Traverse Bay Bands of Odawa Indians, Michigan (THPO and Chairperson)	Mae Wright, THPO 7500 Odawa Cir. Harbor Springs, MI 49740 231-242-1408 mwright@ltbbodawa-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Match-e-be-nash-she-wish Band of Pottawatomí Indians of Michigan (THPO and Chairperson)	Lakota Hobia, THPO Gun Lake Tribe, Attn: THPO 2872 Mission Dr. Shelbyville, MI 49344 269-397-1780 Lakota.Hobia@glt-nsn.gov section106@glt-nsn.gov Kaila.akina@gltt-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.

Tribe	Point of Contact	Coordination Description	Coordination Outreach Timeline	Status	Necessary Permits/Approvals/Next Steps
Nottawaseppi Huron Band of the Potawatomi	Onyleen Zapata, THPO Pine Creek Indian Reservation 1301 T Drive S Fulton, MI 49052 269-704-8347 Onyleen.Zapata@nhbp-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. 01/21/2026: SWCA received email correspondence from Onyleen Zapata (THPO) indicating that the Nottawaseppi Huron Band of the Potawatomi does not wish to participate in the review of the Project.	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Pokagon Band of Potawatomi Indians	Matthew J.N. Bussler, THPO Department of Language and Culture 59291 Indian Lake Road/P.O. Box 180 Dowagiac, MI 49047 269-462-4316 Matthew.Bussler@pokagonband-nsn.gov	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Saginaw Chippewa Indian Tribe of Michigan	Marcella Hadden, THPO Ziibiwing Center of Anishinabe Culture & Lifeways 6650 East Broadway Mt. Pleasant, MI 48858 989-775-4751 mlhadden@sagchip.org	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.
Sault Ste. Marie Tribe of Chippewa Indians, Michigan (Cultural Repatriation Specialist and Chairperson)	Emma Donmyer, Repatriation and Historic Preservation Specialist 2 Ice Circle Chi Mukwa Sault Ste Marie, MI 49783 906-635-6050 ext. 26143 EDonmyer1@saulttribe.net	Project Consultation Letter	January 2026 – present	01/16/2026: SWCA emailed a Project consultation letter to Tribes with an interest in Ottawa County. The letter included recommendations provided by SHPO for content. No response has been received to date	Applicant will continue to consult with the SHPO and THPOs. Comments received will be incorporated into the cultural survey plan, recordation, and design updates as needed. Cultural resources surveys are expected to be completed by Q2 of 2026 with submittal of findings to SHPO and THPOs, as requested, Q2/Q3 of 2026.

Tribal Coordination

(Copy of January 16, 2026 consultation letter sent to all tribes, privileged information redacted as needed, attachments included.)

Bay Mills Indian Community



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:46 PM

To paulacarrick@baymills.org <paulacarrick@baymills.org>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_BayMillsIndianCommunity_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Paula Carrick
Tribal Historic Preservation Officer
Bay Mills Indian Community
12140 West Lakeshore Drive
Brimley, MI 49715
Via Email: paulacarrick@baymills.org

Dear Paula Carrick,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

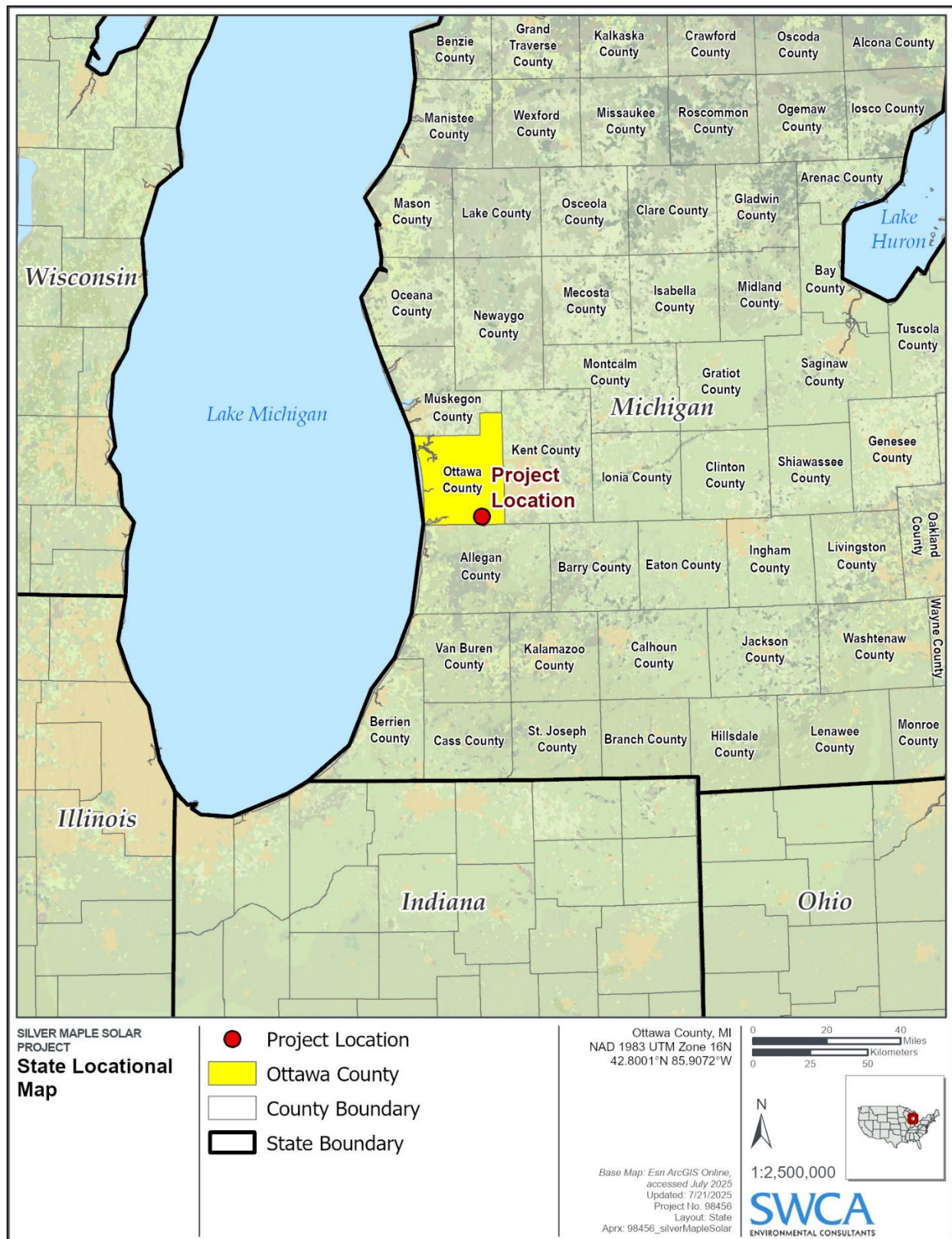


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

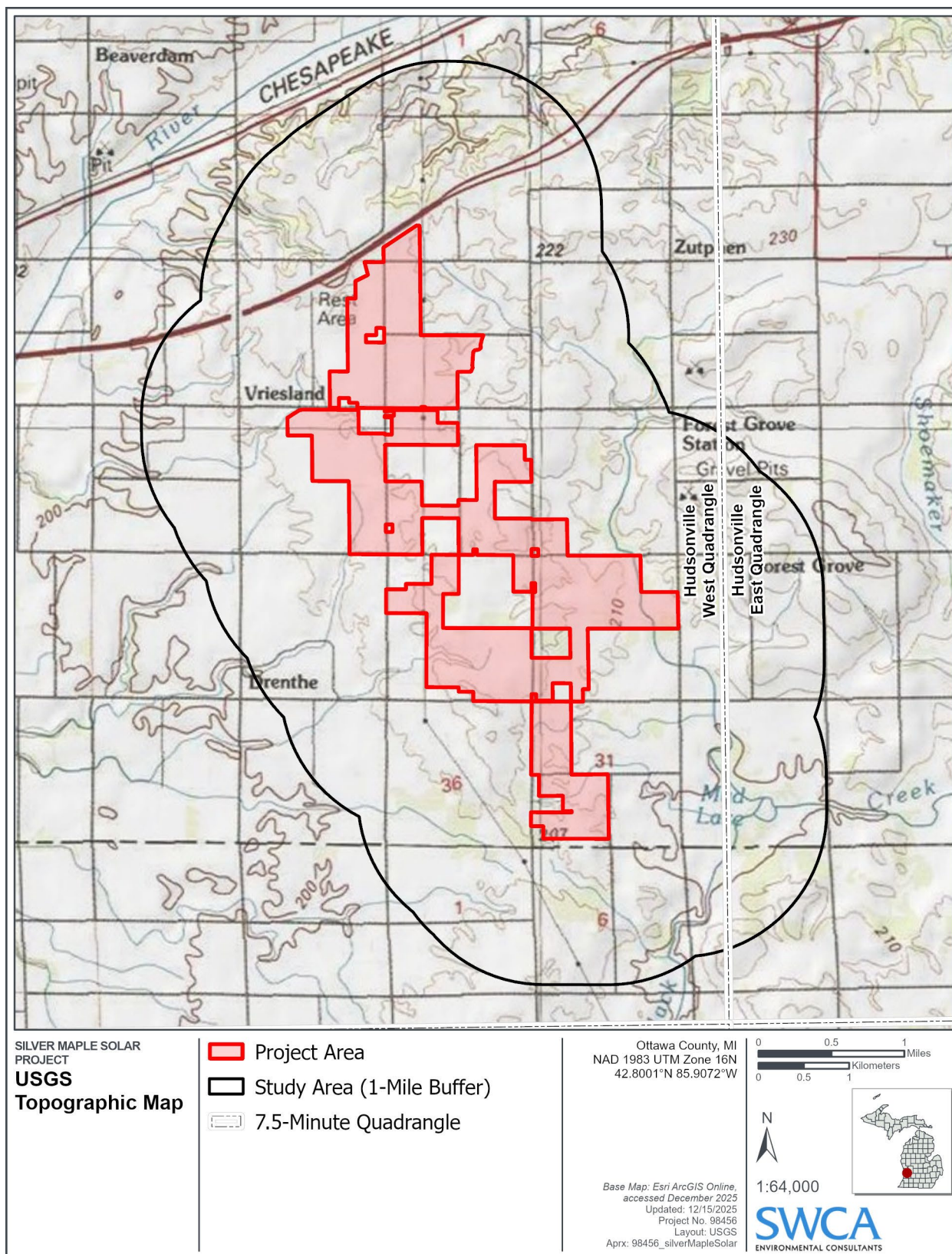


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

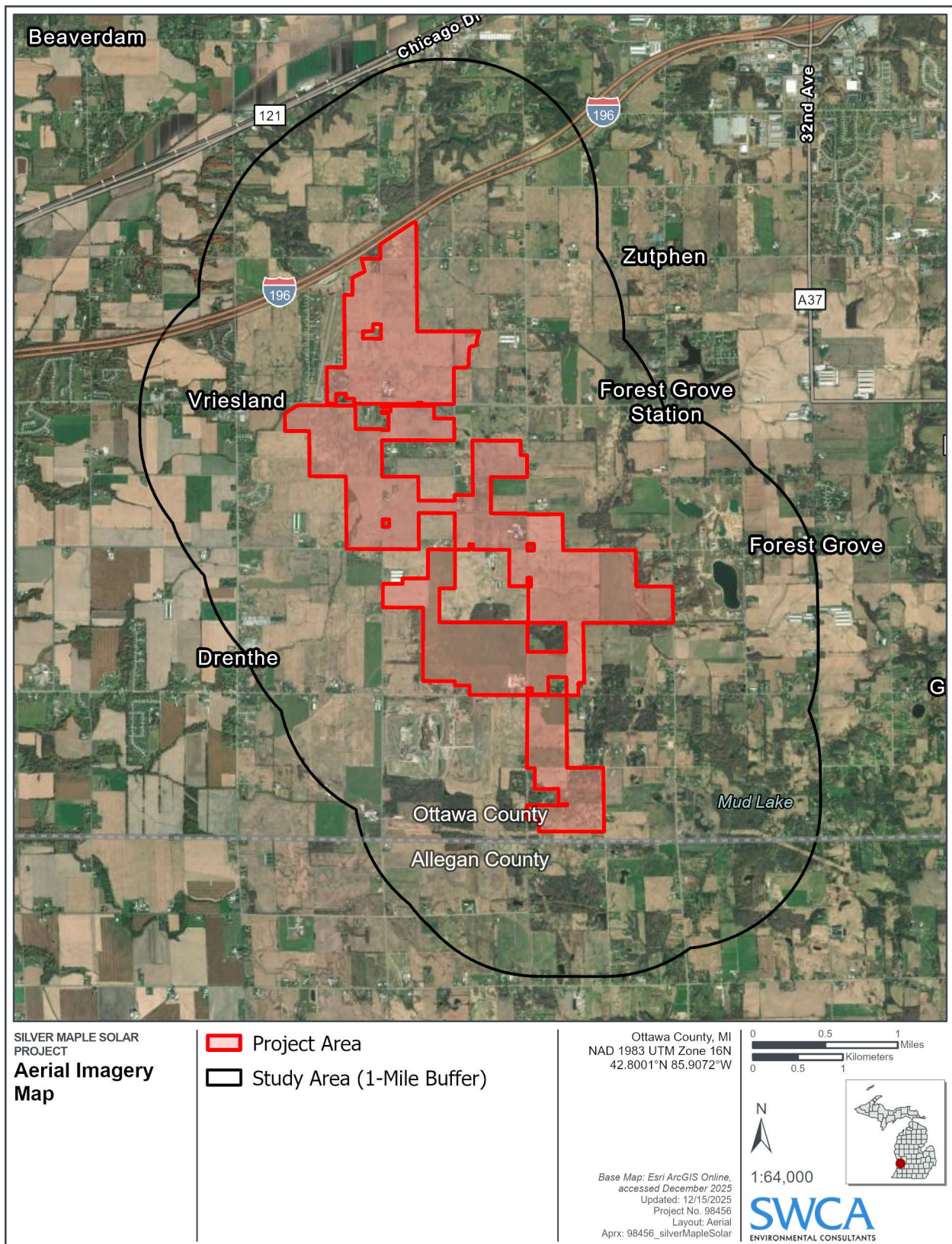


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA (Soil & Water Conservation Agency) is displayed vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' in a large, stylized, light blue font, stacked one above the other.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

RWE Clean Energy, LLC
353 North Clark Street, 30th Floor
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Prepared by

Erin Walpole, B.A.
James G. Parker, M.A., RPA
Megan Daniels, M.P.S.
Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Architectural resources, which consist of historic buildings, structures, and districts, have the potential to be visually affected by projects, and per MI SHPO guidelines, the effect on such resources must be accounted for. SWCA reviewed the National Park Service's NRHP database for Ottawa and Allegan Counties, Michigan, regarding information on historic districts, buildings, archaeological sites, and other properties eligible for or listed in the NRHP. The NRHP database did not identify any NRHP-listed resources within the project or study areas (National Park Service 2025).

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

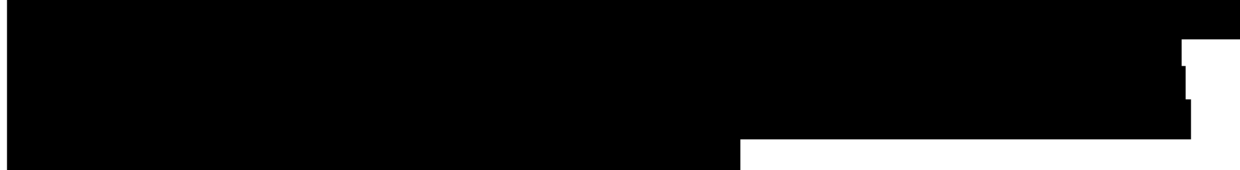
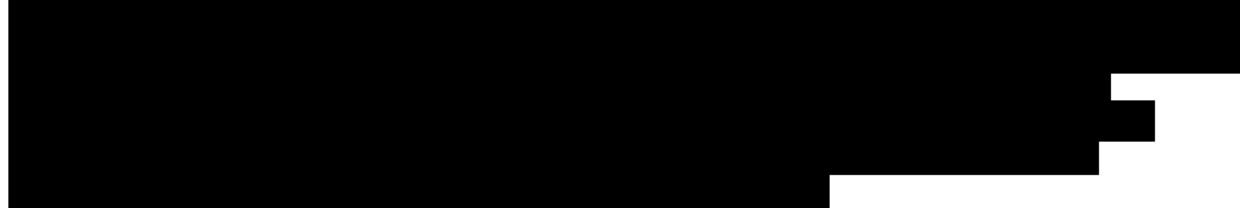
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

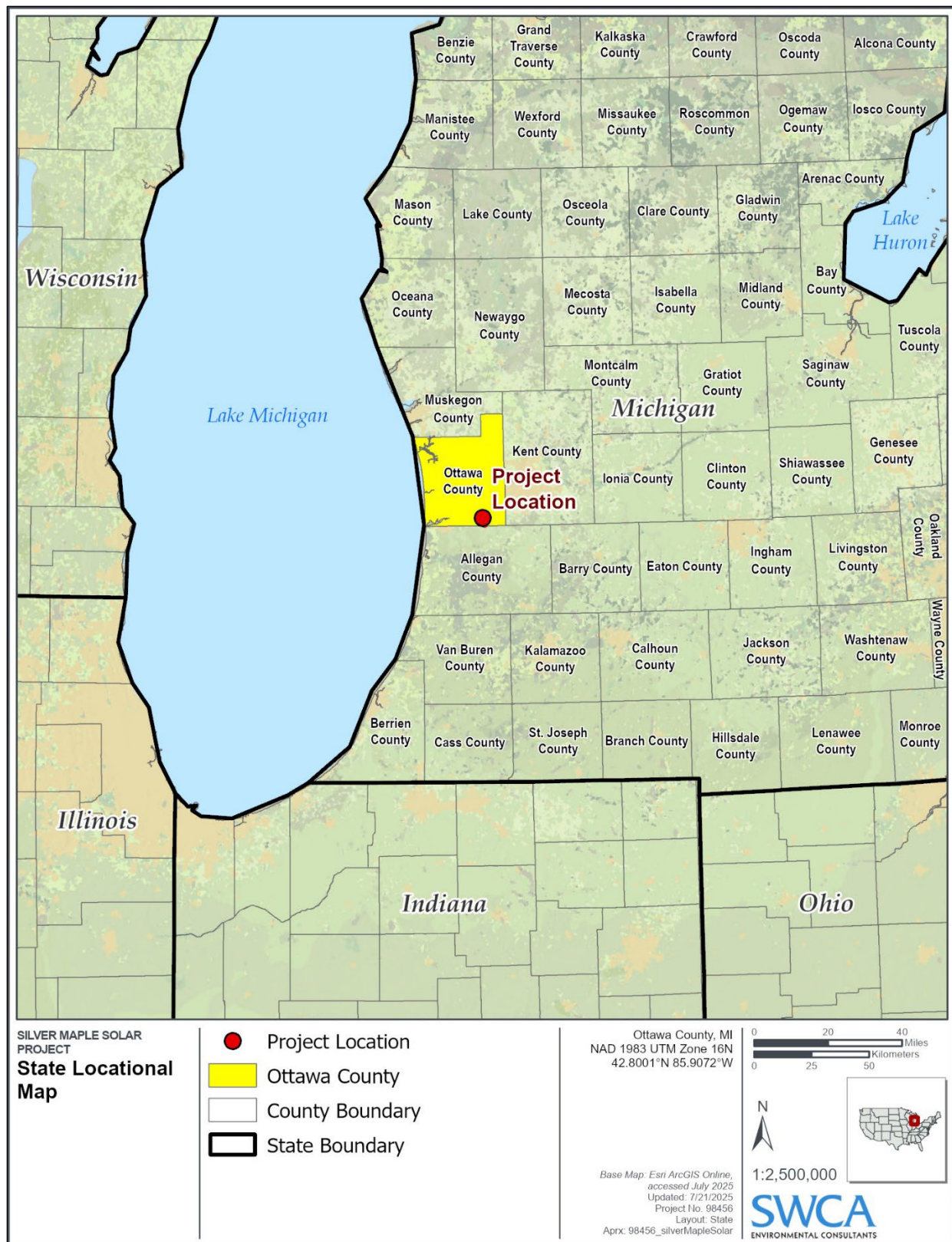


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

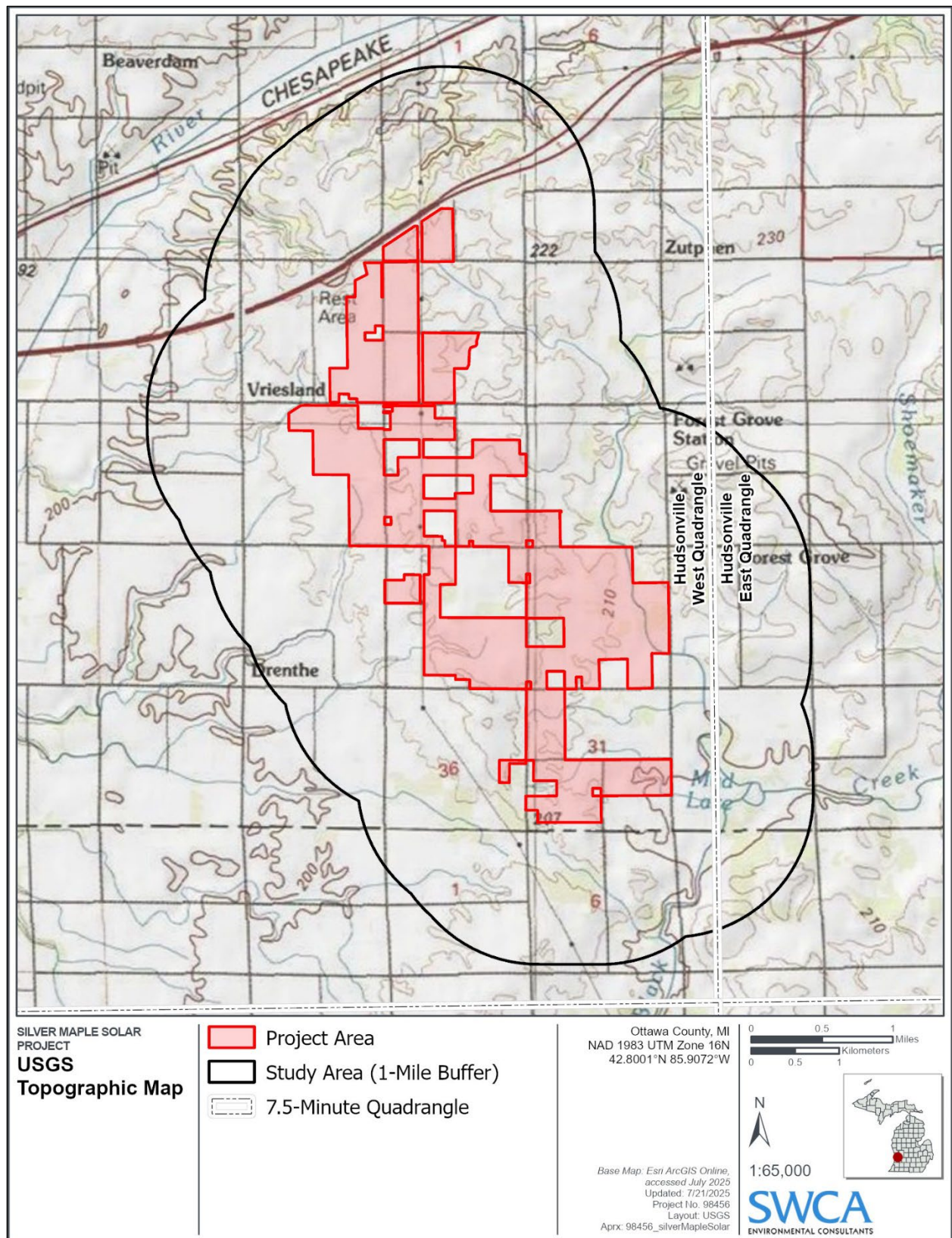


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

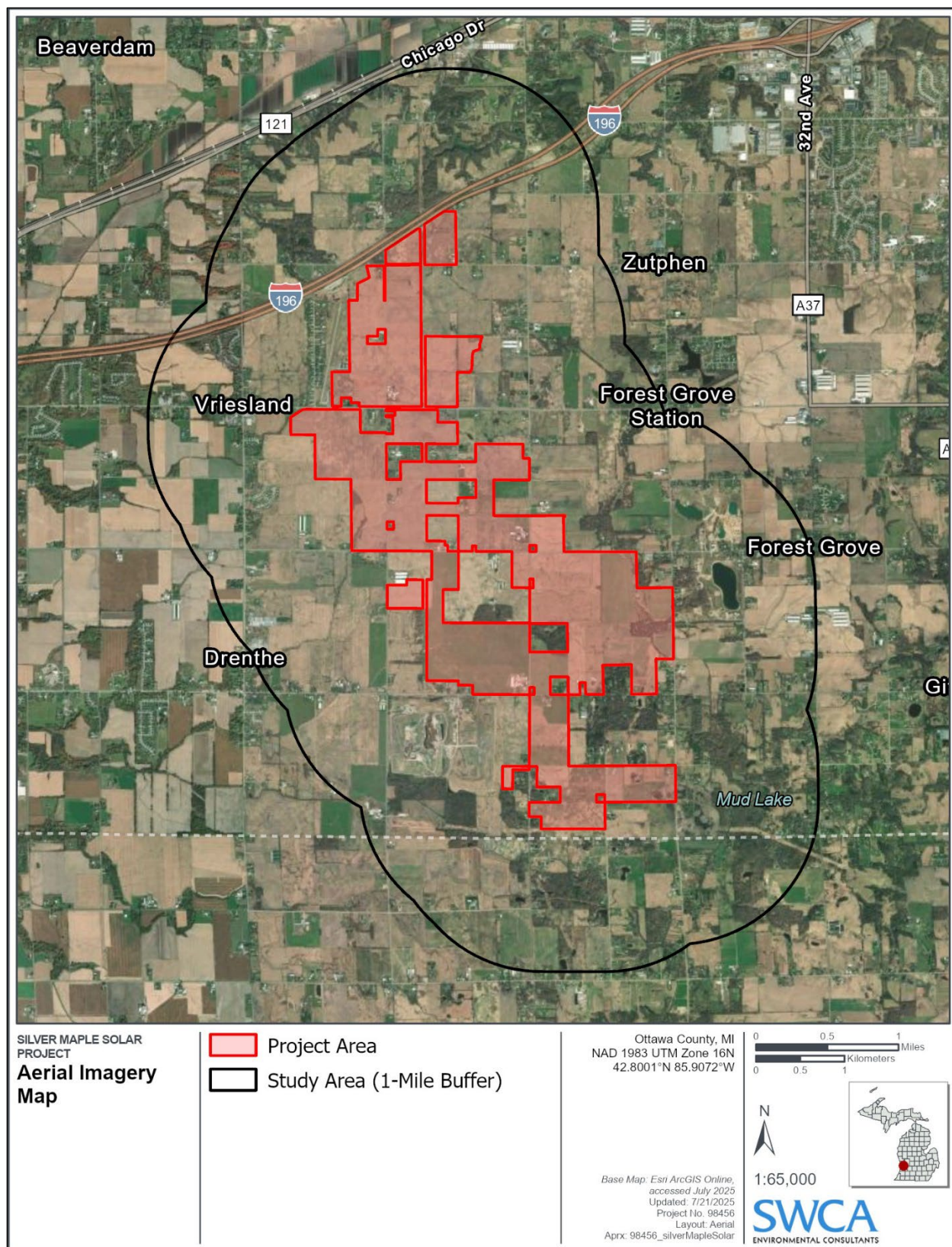


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

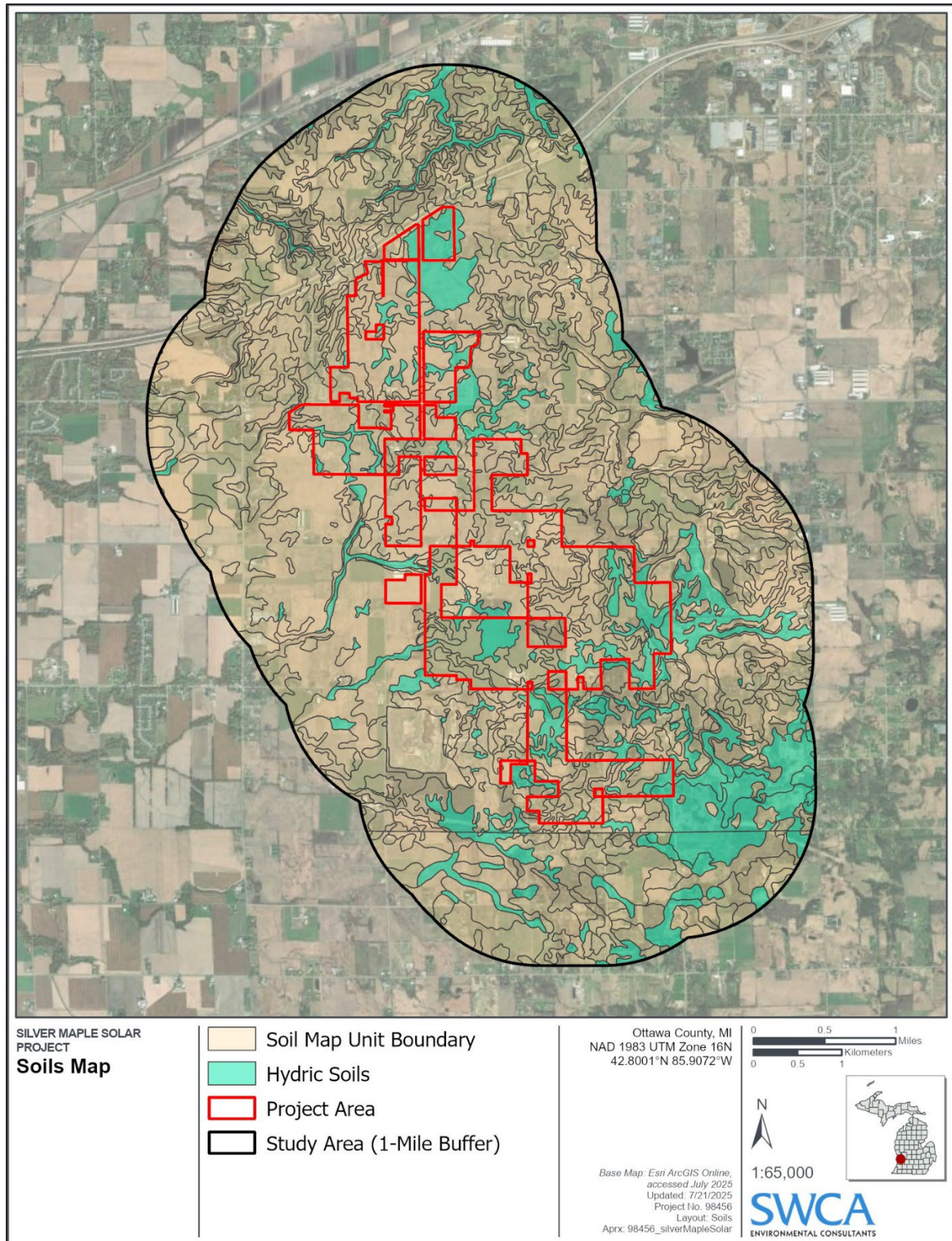


Figure A-4. Soils within the study area.

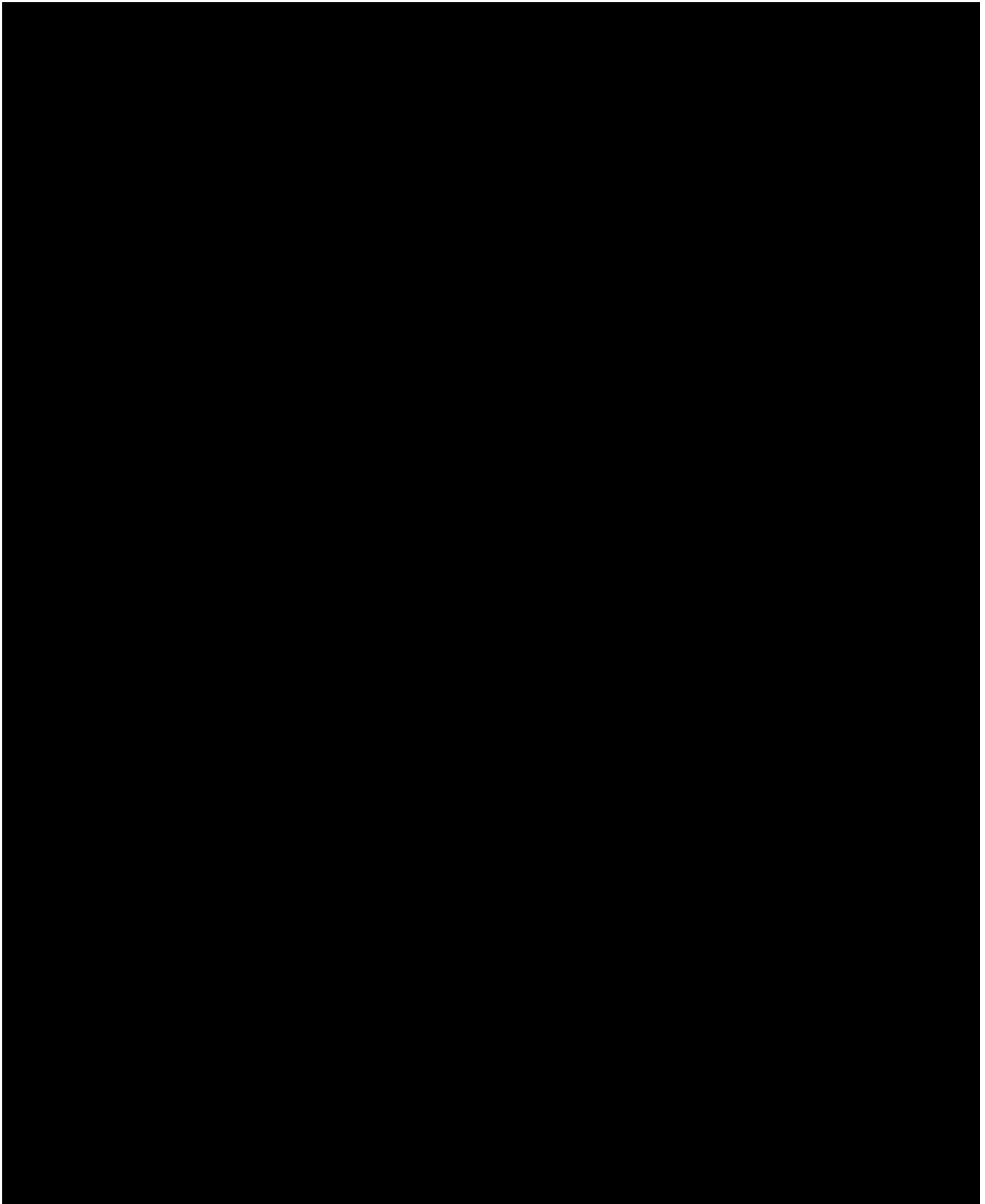


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Grand Traverse Band of Ottawa and Chippewa Indians



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:46 PM

To aaron.chivis@gtb-nsn.gov <aaron.chivis@gtb-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver Maple Consultation LTR_15Jan2026_GrandTraverseBandOttawa&ChippewaIndians_signed.pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Aaron Chivis
Cultural Department Manager
Grand Traverse Band of Ottawa & Chippewa Indians
2605 N. West Bay Shore Drive
Peshawbestown, MI 49862
Via Email: aaron.chivis@gtb-nsn.gov

Dear Aaron Chivis,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,

Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

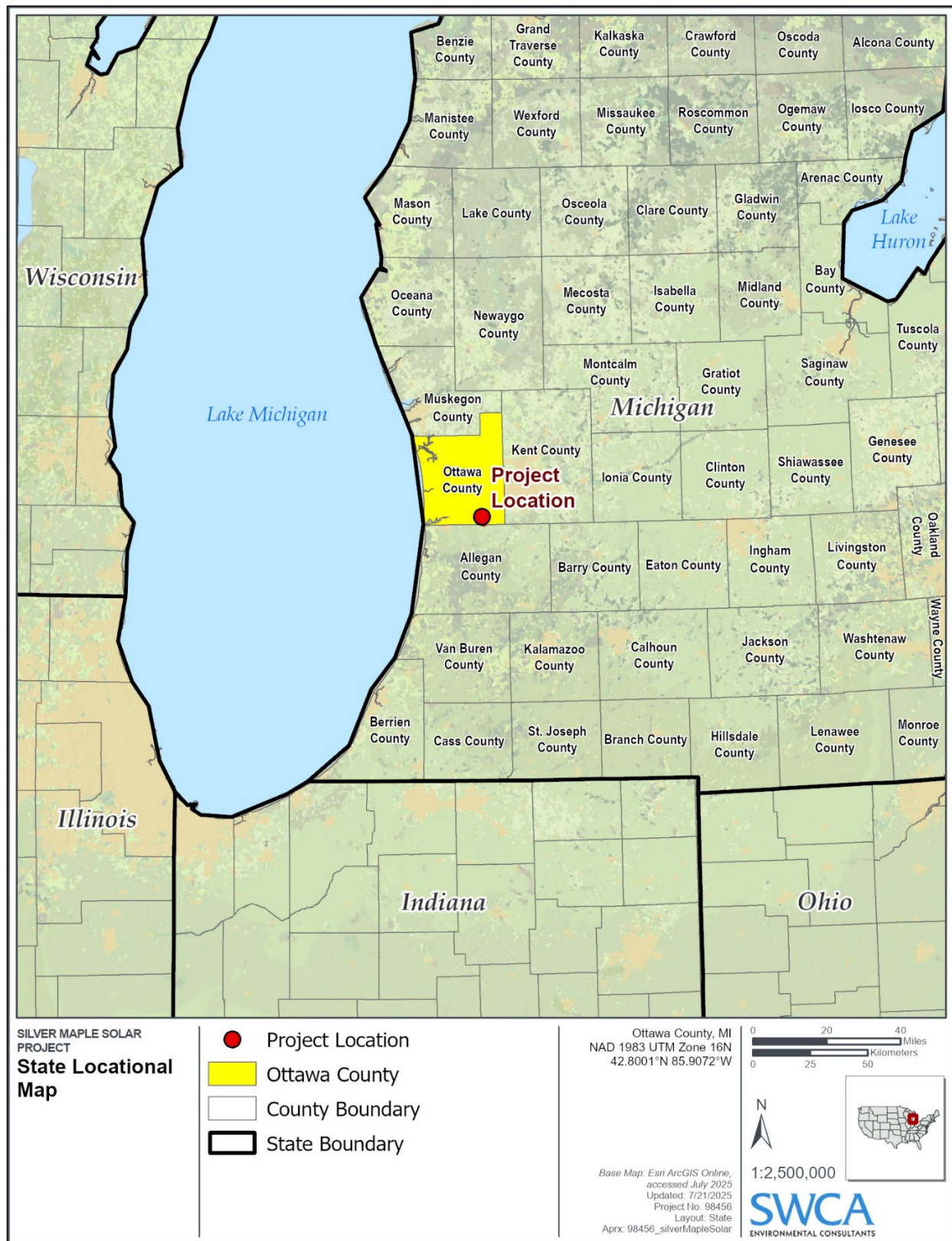


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

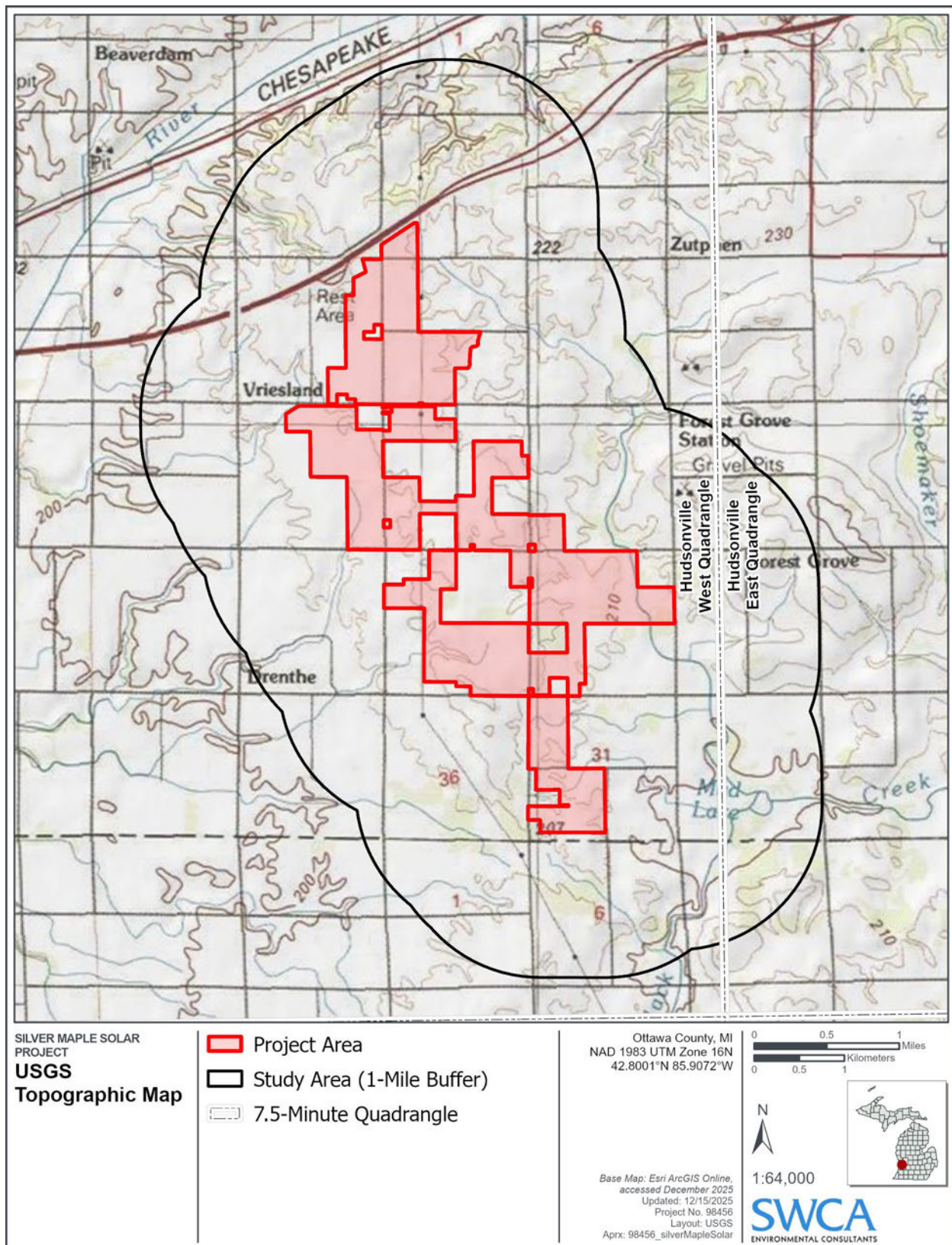


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

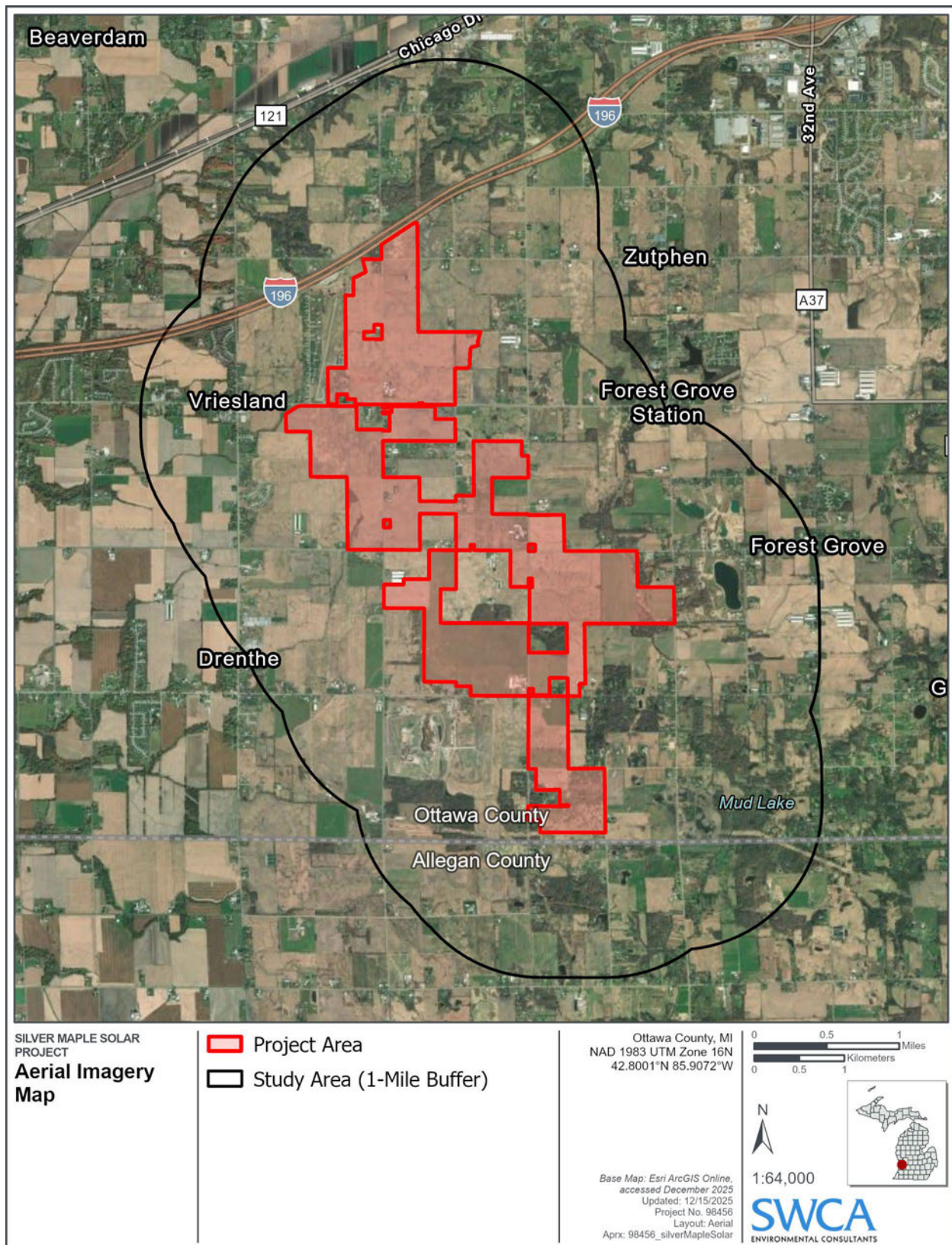


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' stacked vertically in a large, light blue, serif font.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

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SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Architectural resources, which consist of historic buildings, structures, and districts, have the potential to be visually affected by projects, and per MI SHPO guidelines, the effect on such resources must be accounted for. SWCA reviewed the National Park Service's NRHP database for Ottawa and Allegan Counties, Michigan, regarding information on historic districts, buildings, archaeological sites, and other properties eligible for or listed in the NRHP. The NRHP database did not identify any NRHP-listed resources within the project or study areas (National Park Service 2025).

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

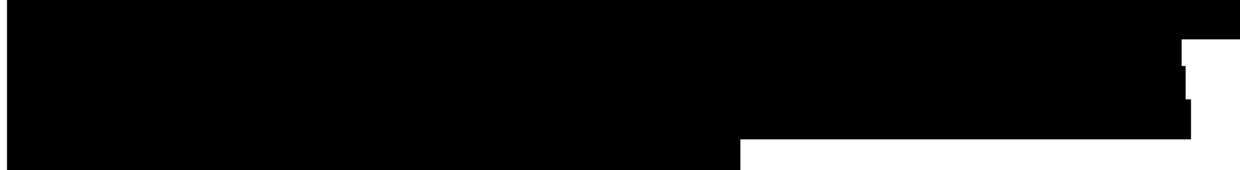
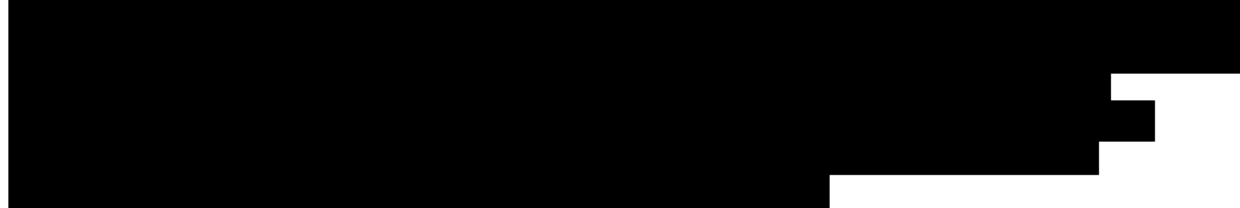
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

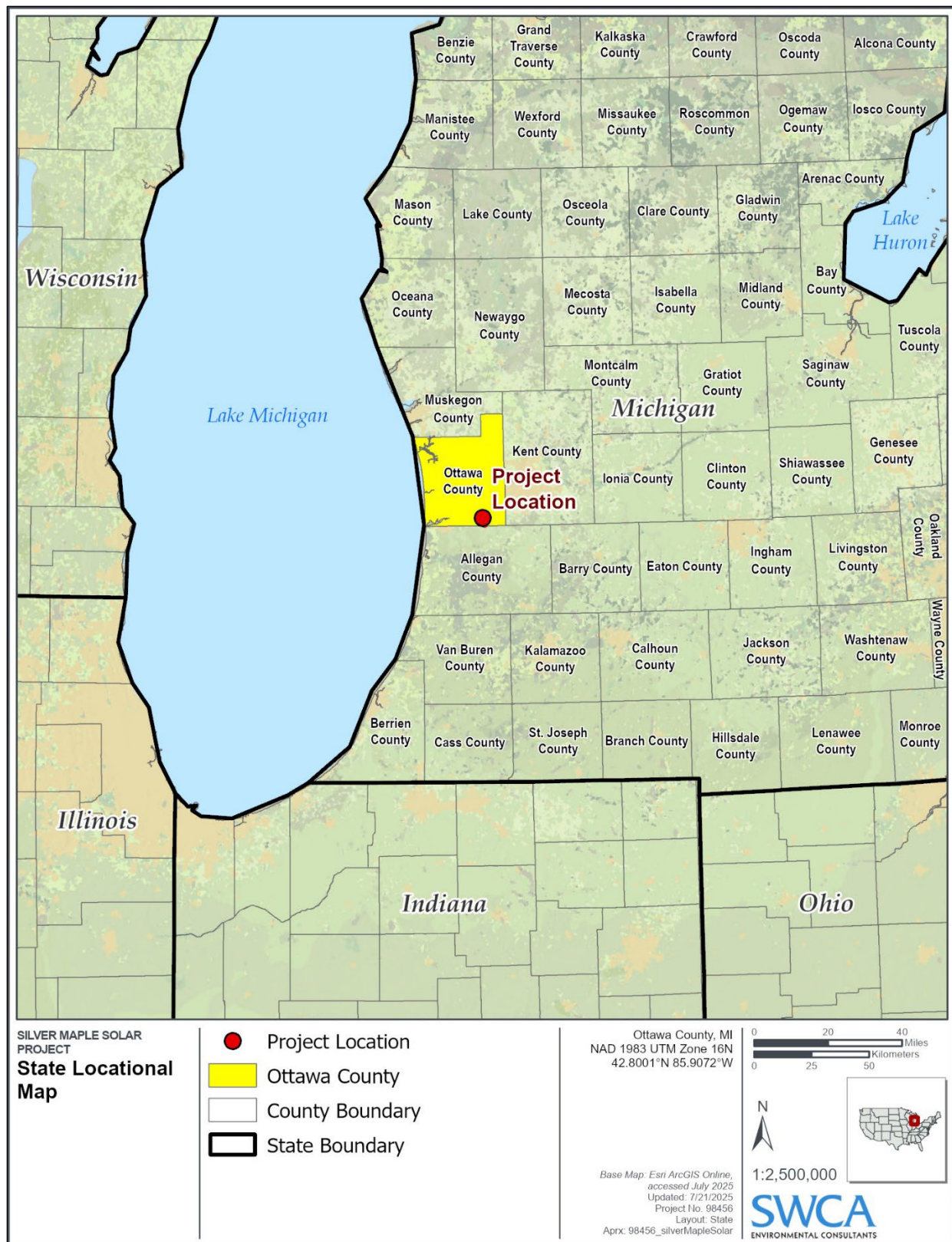


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

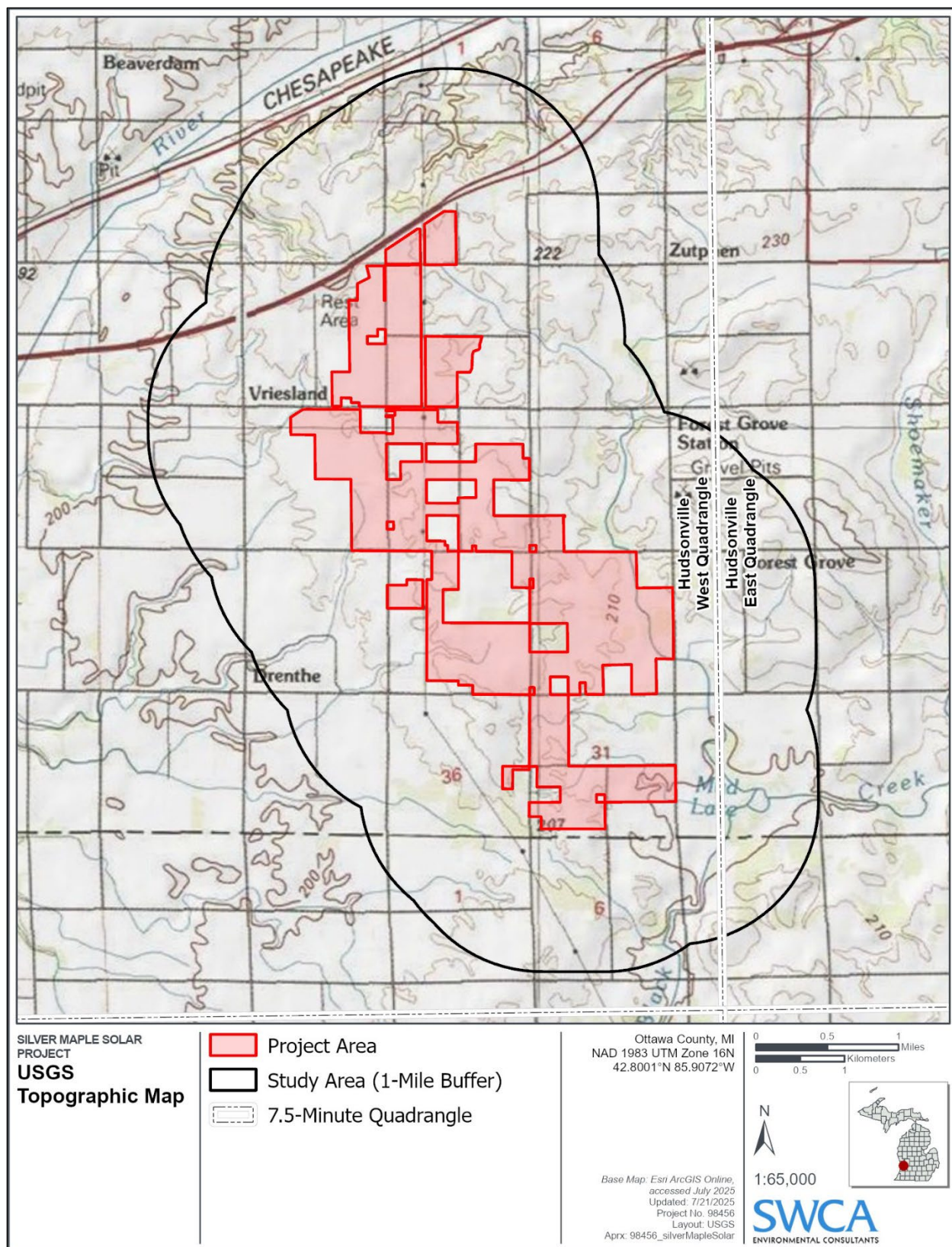


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

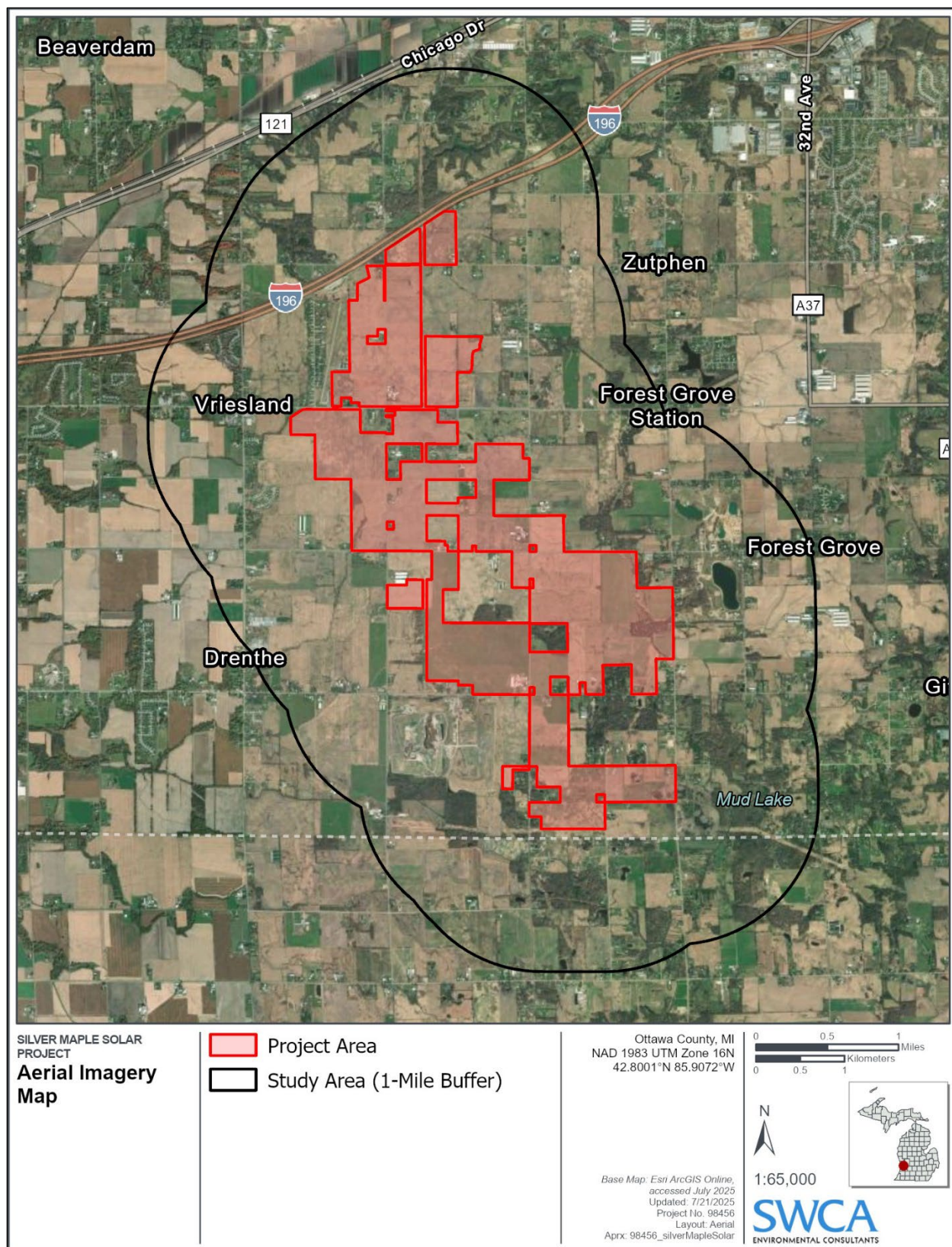


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

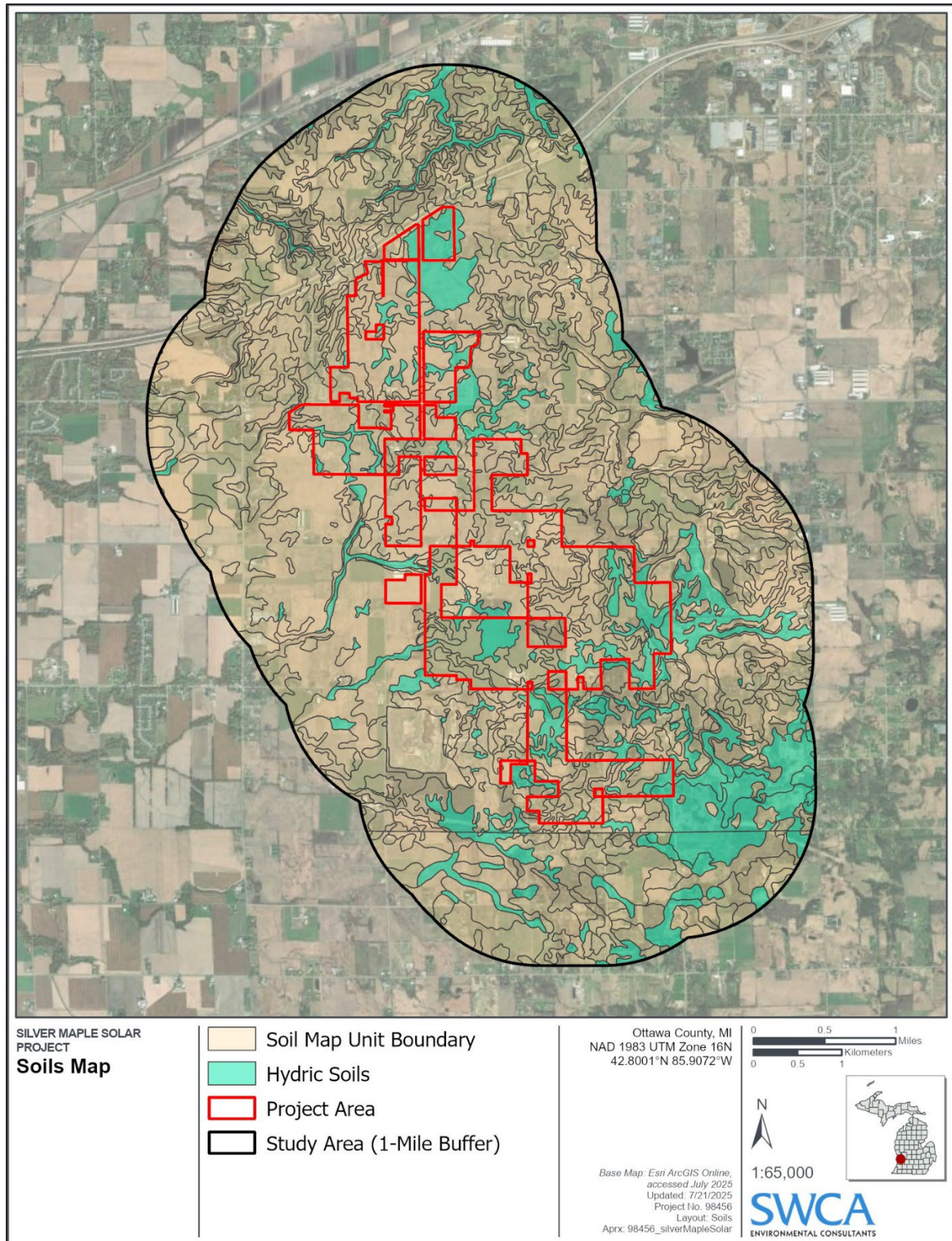


Figure A-4. Soils within the study area.

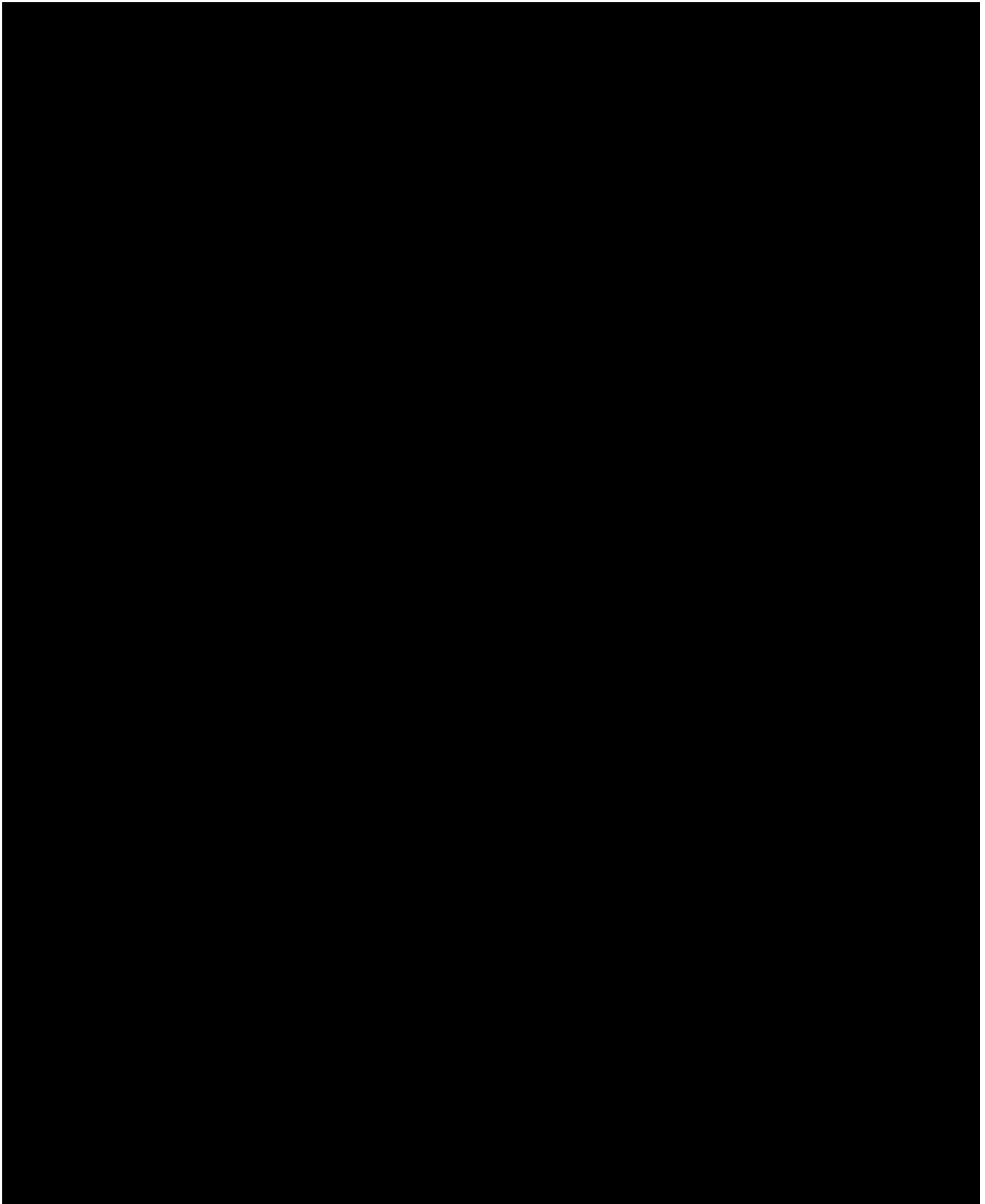


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Hannahville Indian Community, Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:46 PM

To dustin.meshigaud@hannahville.org <dustin.meshigaud@hannahville.org>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver Maple Consultation LTR_15Jan2026_HannahvilleIndianCommunity_signed.pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Dustin Meshigaud
Tribal Historic Preservation Officer
Hannahville Indian Community
N14911 Hannahville B-1 Road
Wilson, MI 49896
Via Email: dustin.meshigaud@hannahville.org

Dear Dustin Meshigaud,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

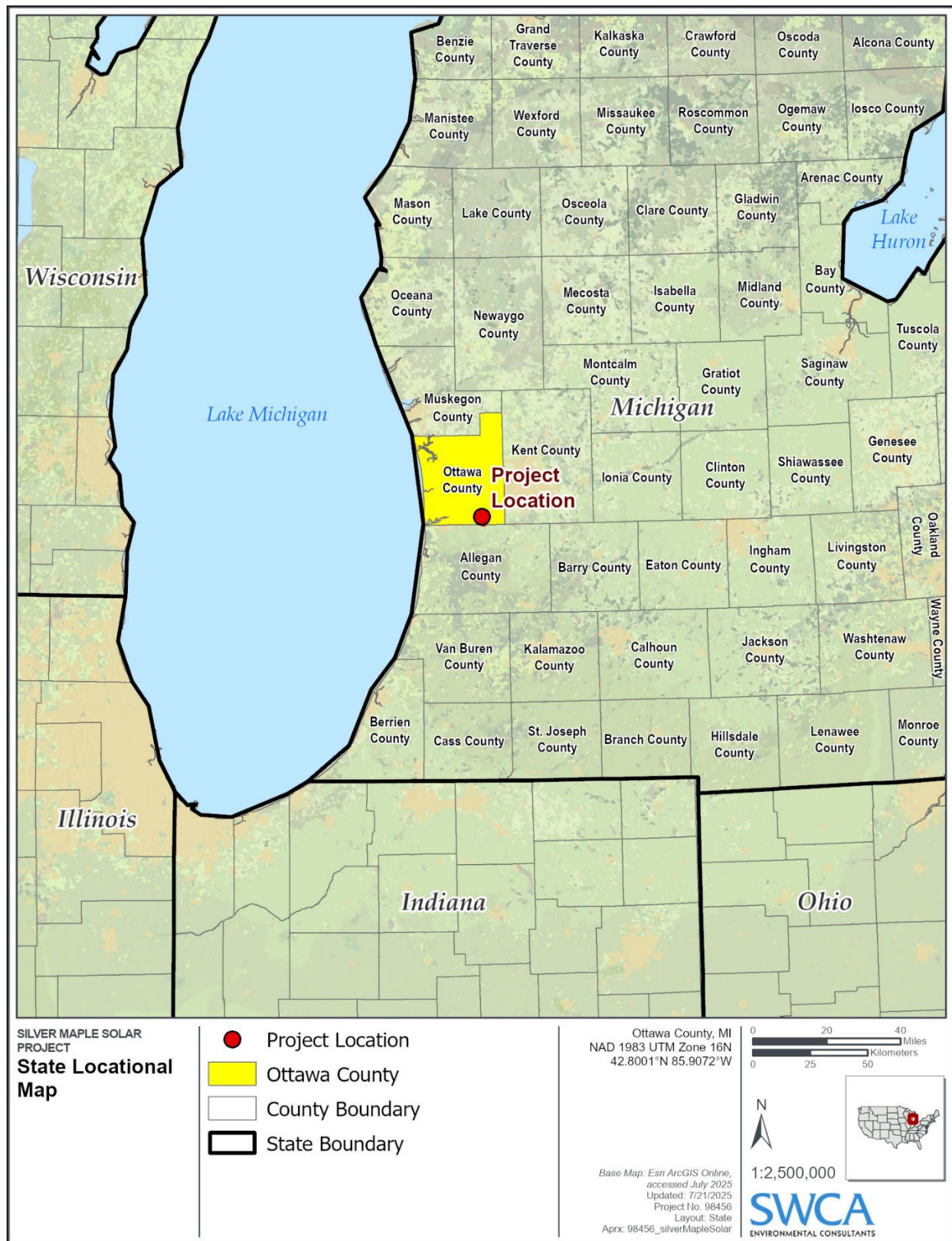


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

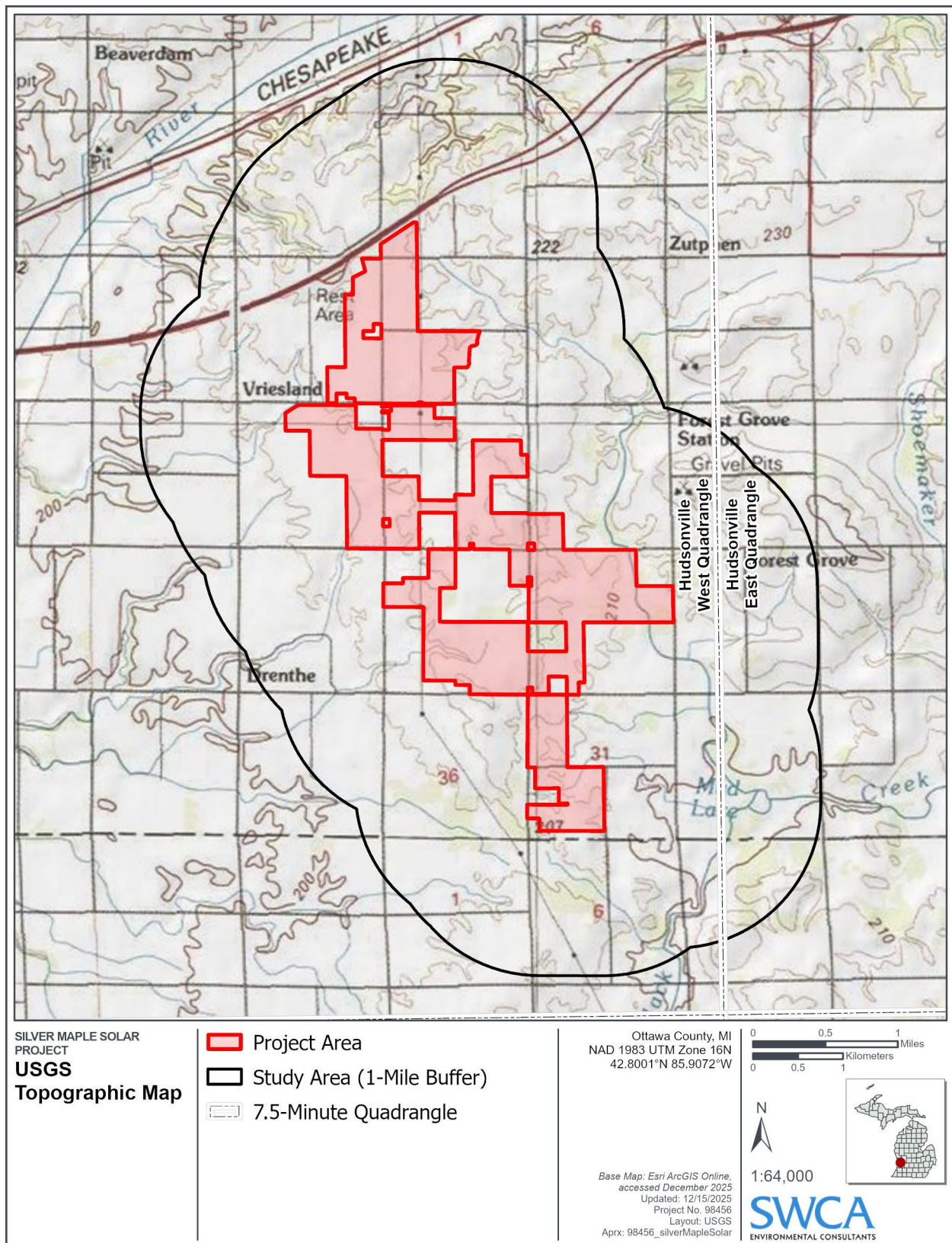


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

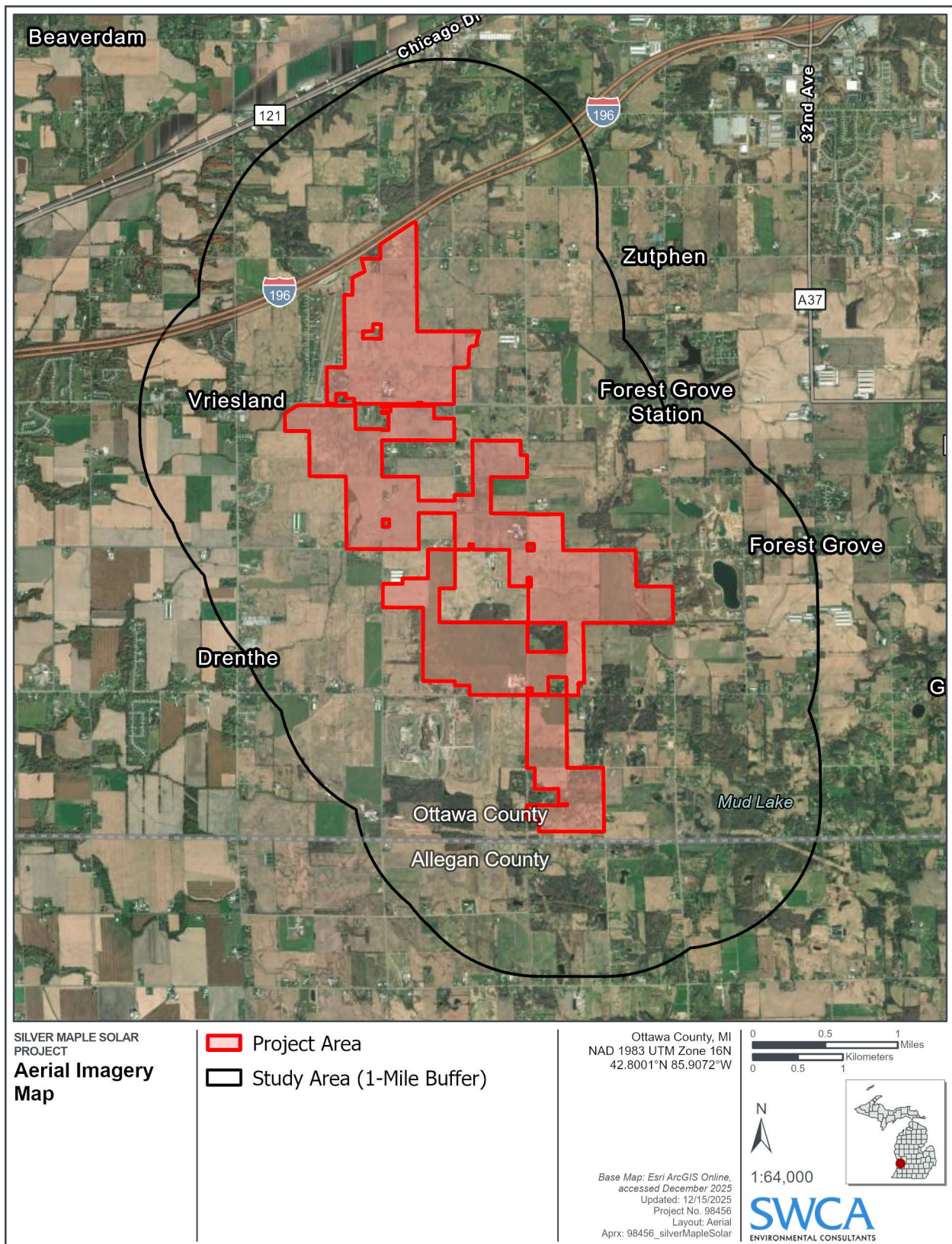


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' stacked vertically in a large, light blue, serif font.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER15-225d	2017	Jones, Rhiannon	Phase I Cultural Resource Investigations Proposed ANR Pipeline Maintenance Digs SCC.12, Ottawa County, Michigan	Study Area

2.6 Previously Recorded Archaeological Sites

[illegible]

2.7 Previously Recorded Architectural Resources and Cemeteries

Architectural resources, which consist of historic buildings, structures, and districts, have the potential to be visually affected by projects, and per MI SHPO guidelines, the effect on such resources must be accounted for. SWCA reviewed the National Park Service's NRHP database for Ottawa and Allegan Counties, Michigan, regarding information on historic districts, buildings, archaeological sites, and other properties eligible for or listed in the NRHP. The NRHP database did not identify any NRHP-listed resources within the project or study areas (National Park Service 2025).

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

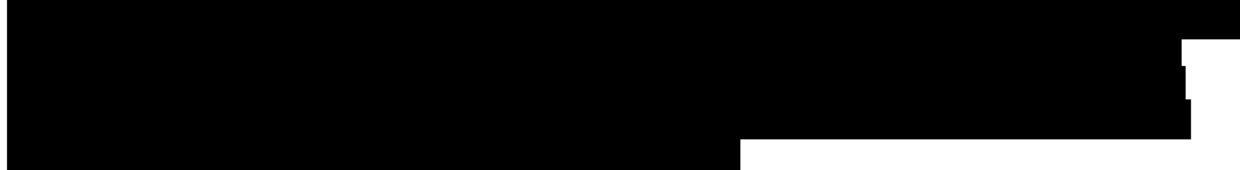
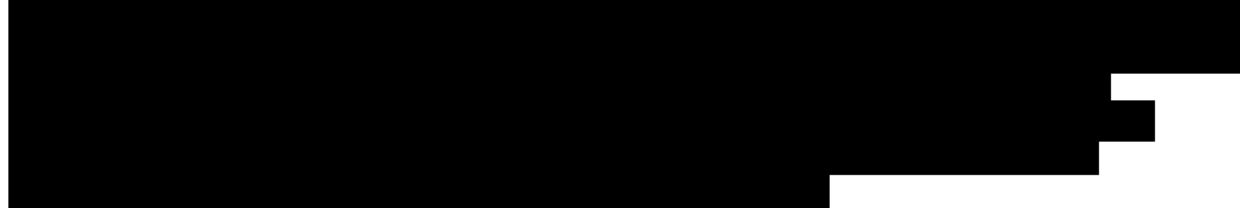
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

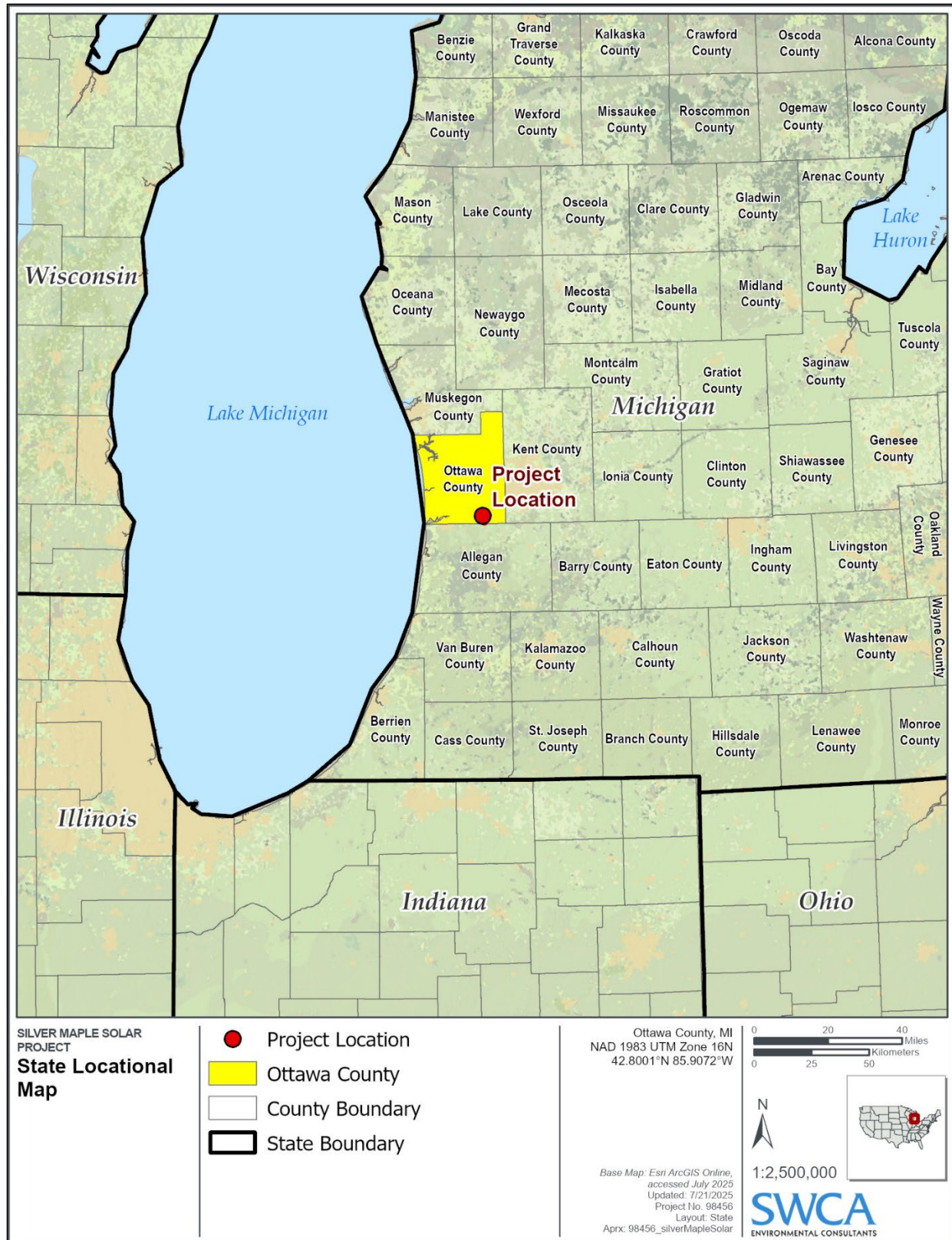


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

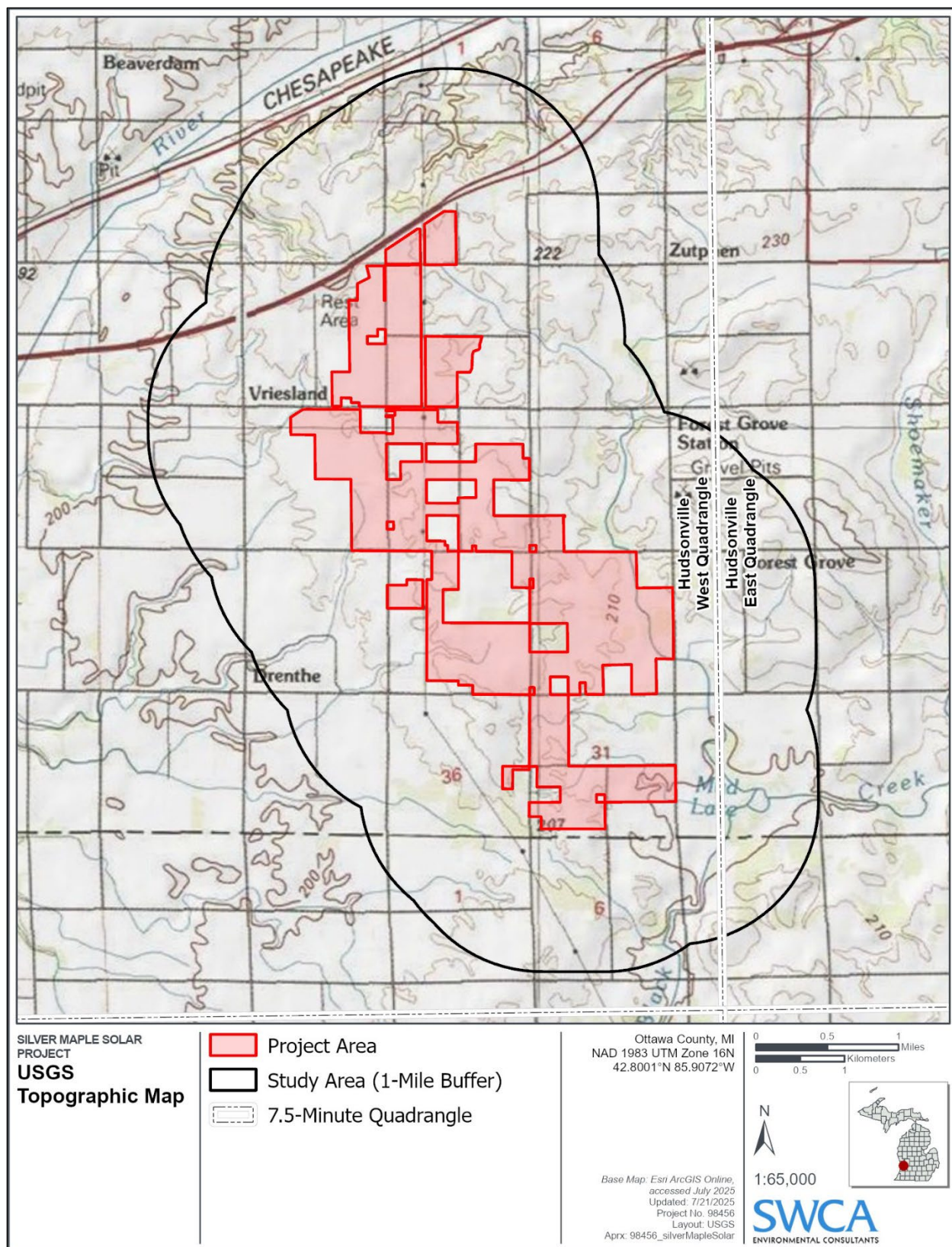


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

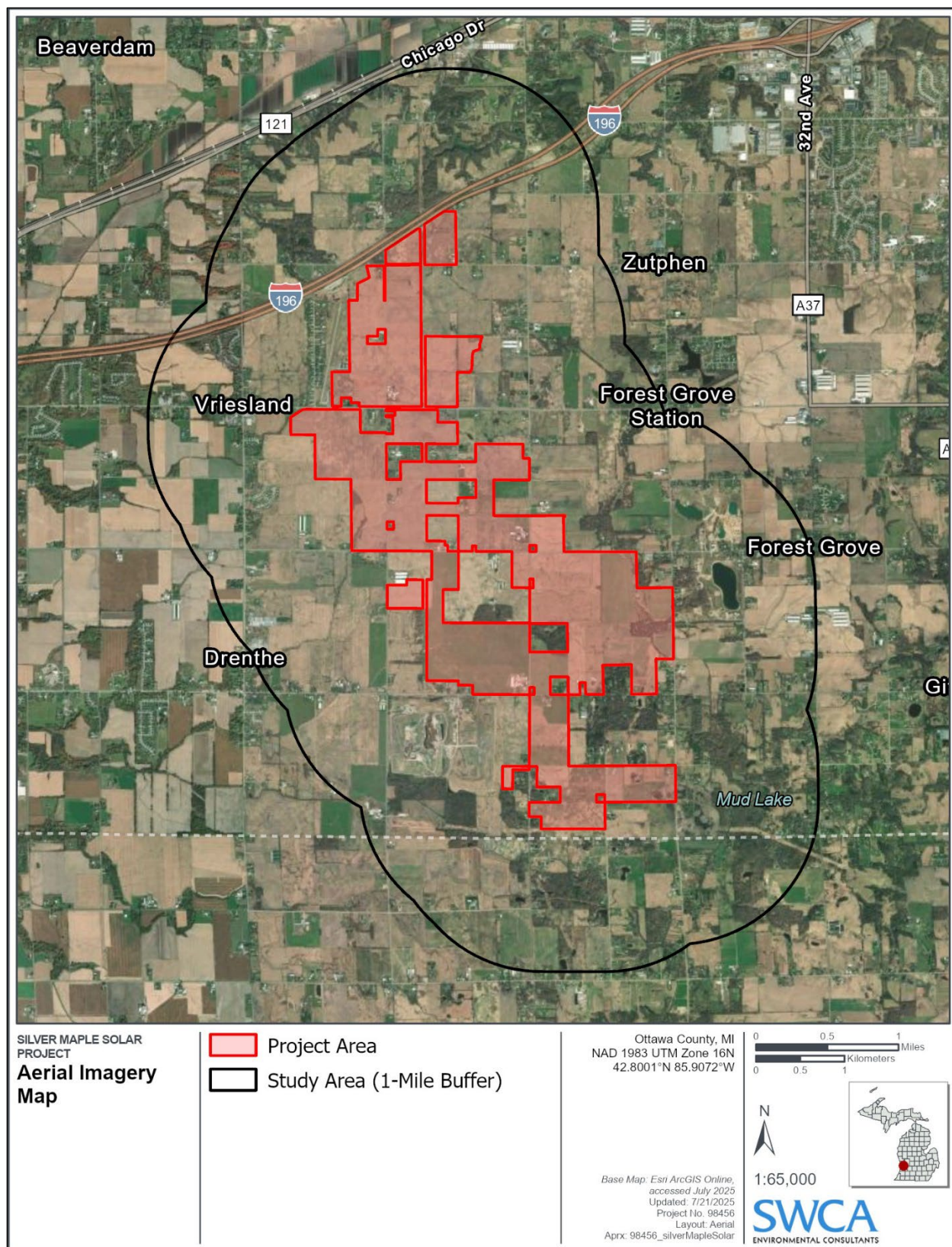


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

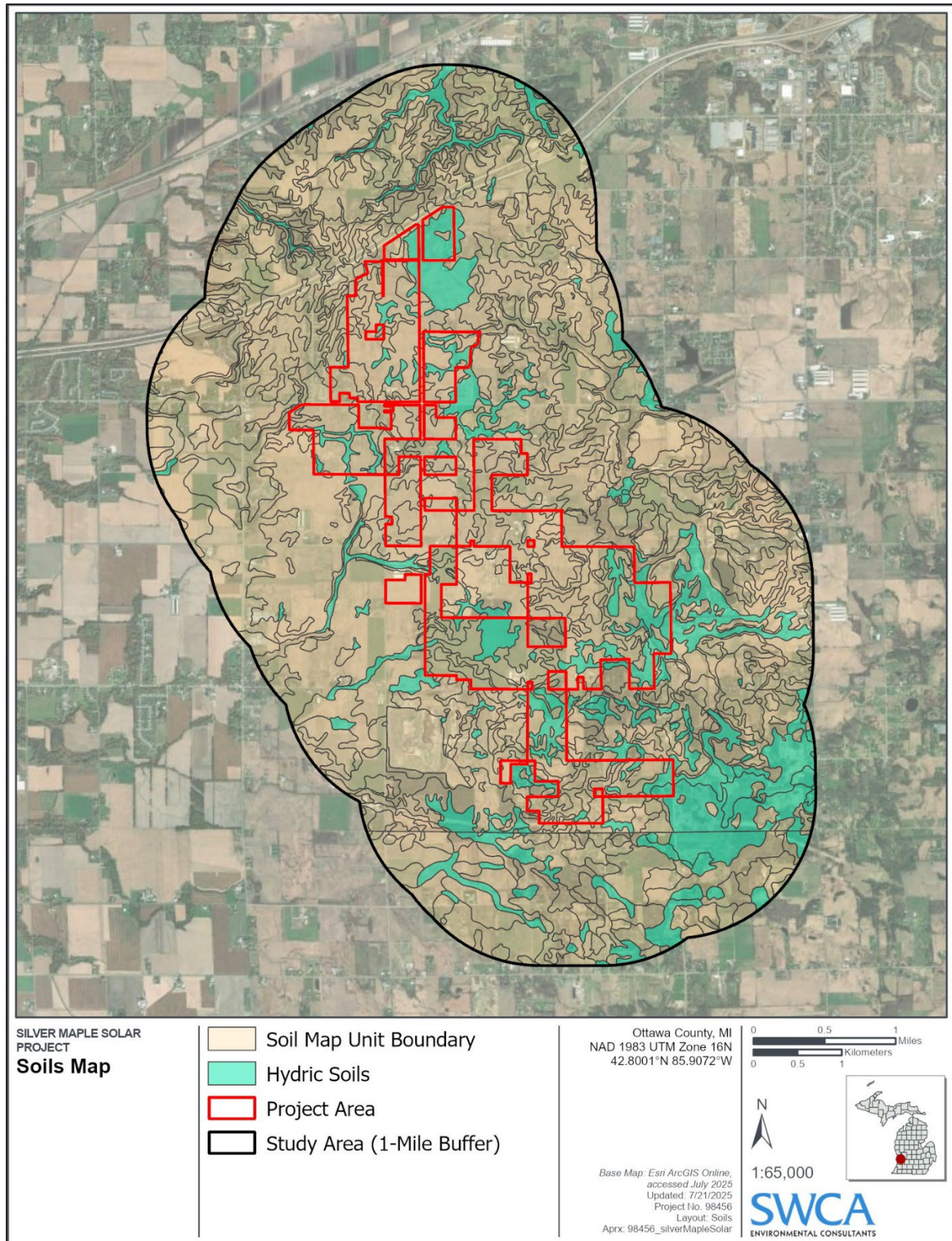


Figure A-4. Soils within the study area.

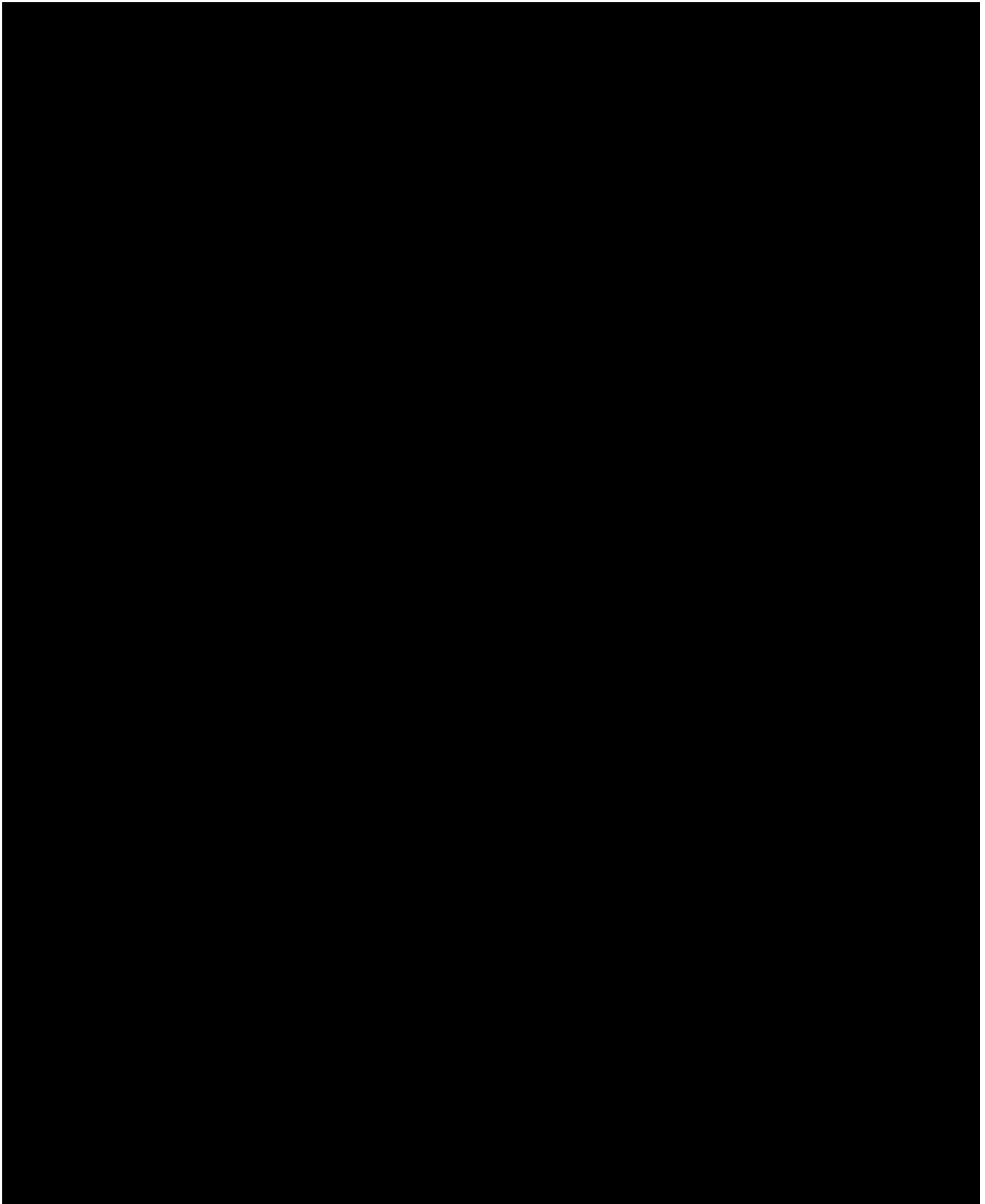


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Keweenaw Bay Indian Community (KBIC) of the Lake Superior Band of Chippewa Indians



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:47 PM

To Paul Halverson <phalverson@kbic-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_KeweenawBayIndianCommunityLakeSuperiorBandChippewaIndians_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Paul Halverson
Tribal Historic Preservation Officer
Keweenaw Bay Indian Community of the Lake Superior Band of Chippewa Indians
16429 Bear Town Road
Baraga, MI 49908
Via Email: phalverson@kbic-nsn.gov

Dear Paul Halverson,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

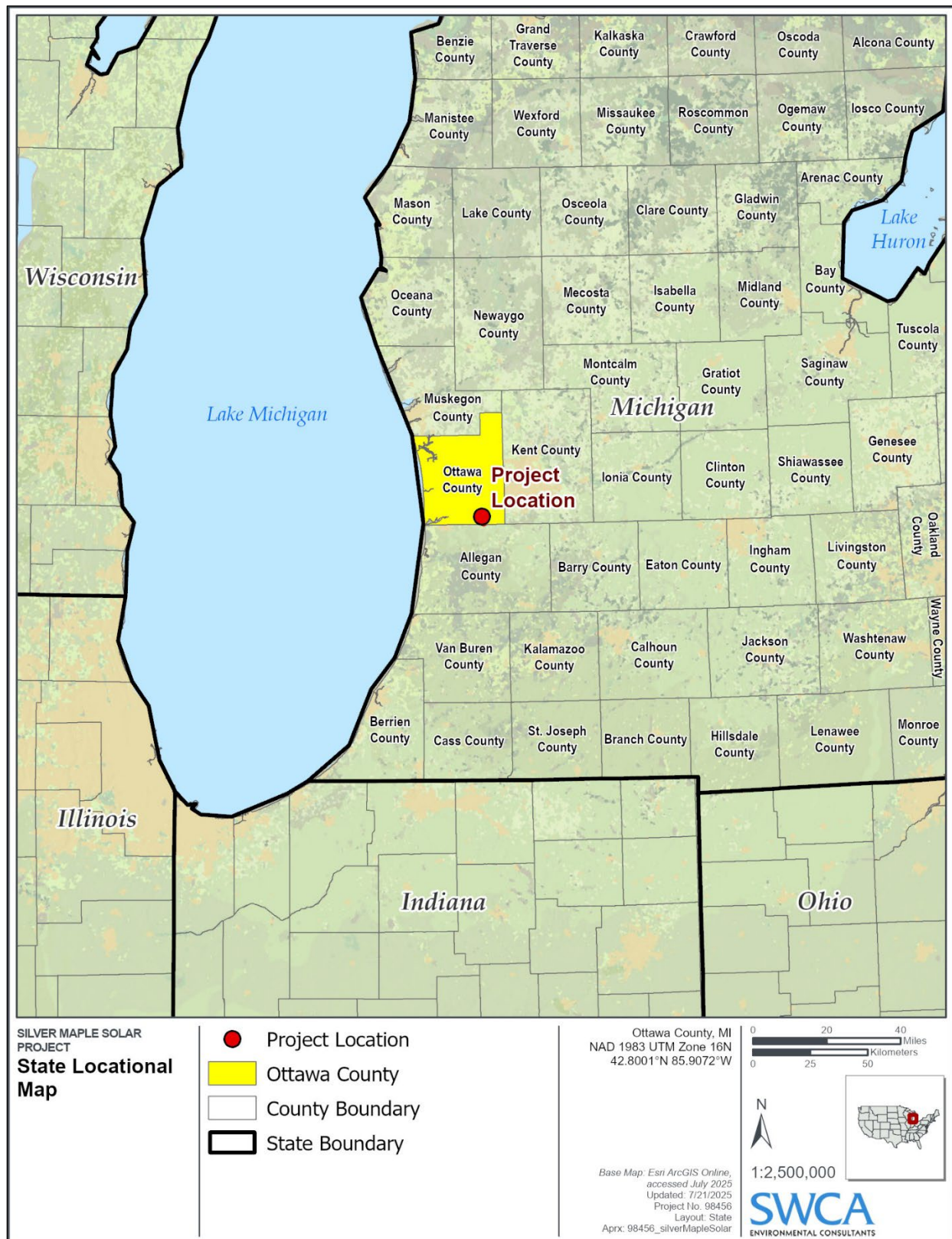


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

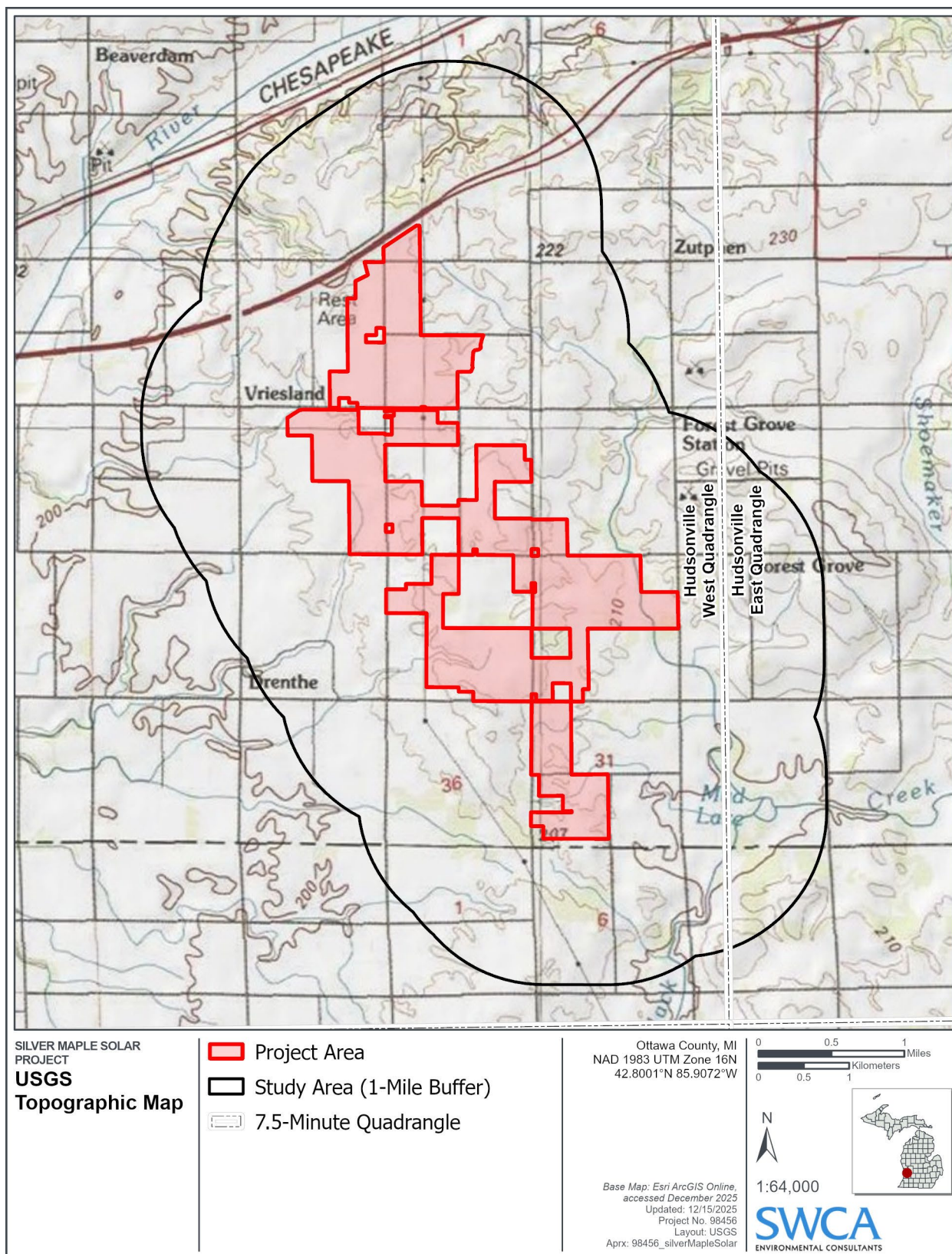


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

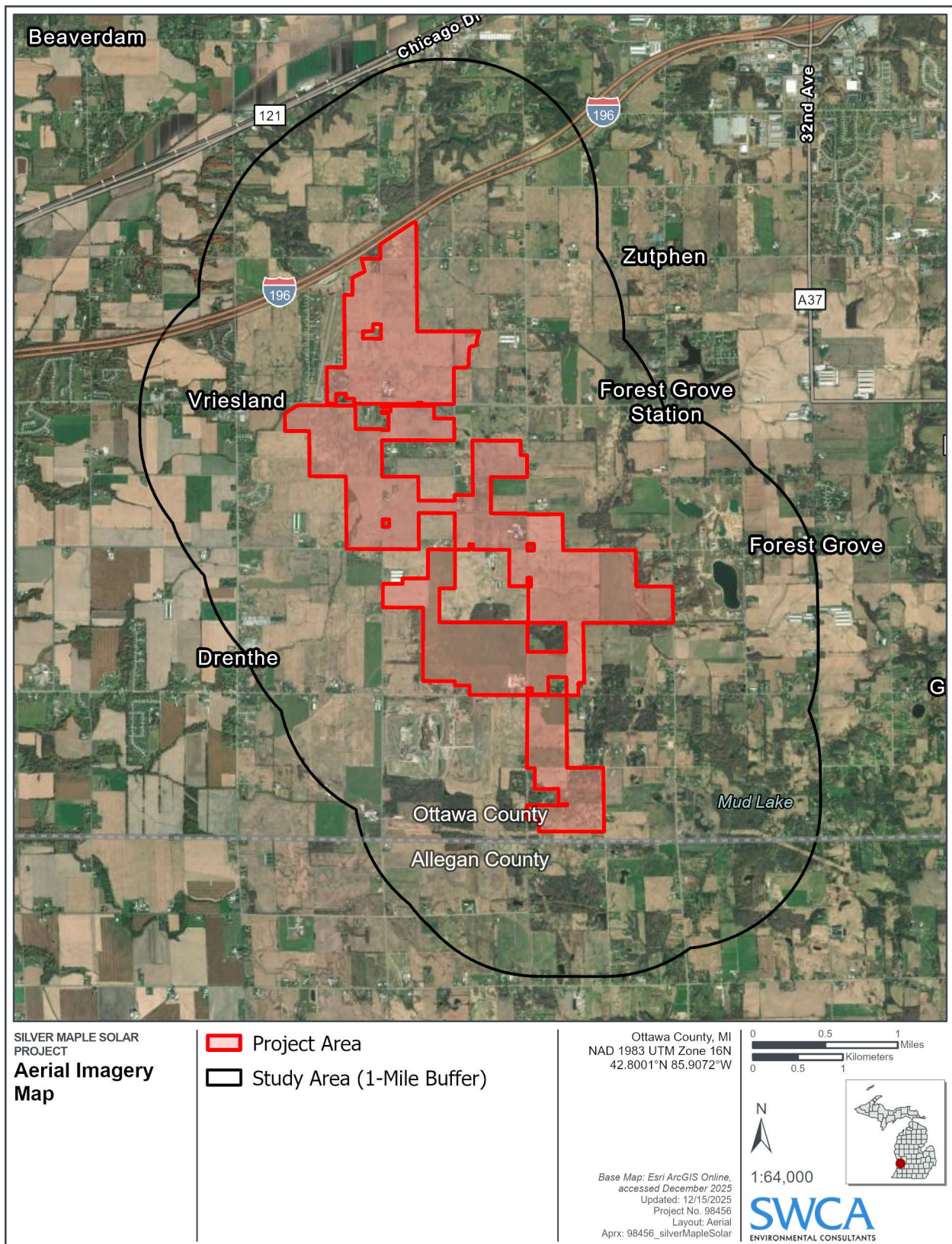


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 116

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

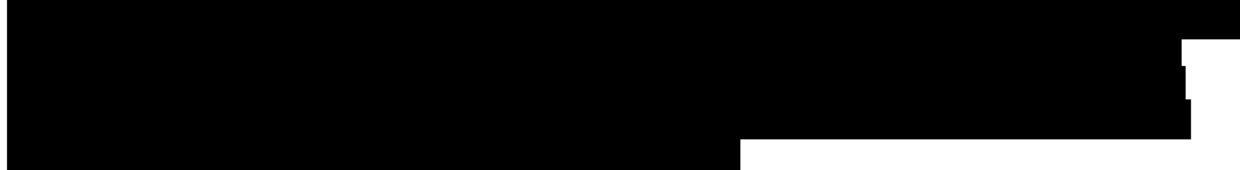
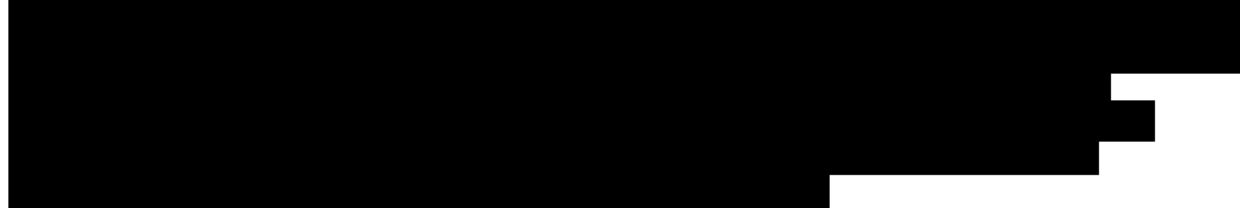
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

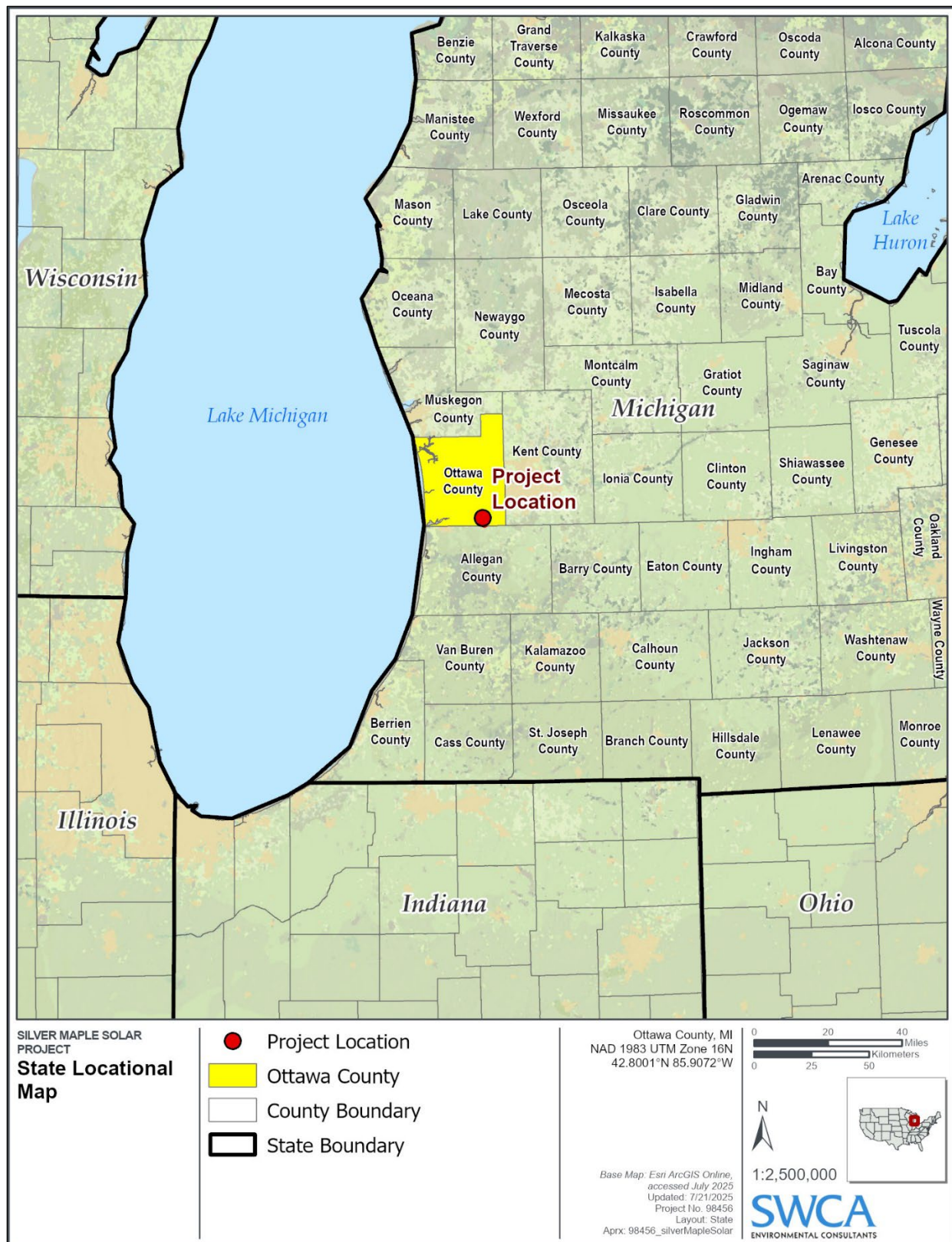


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

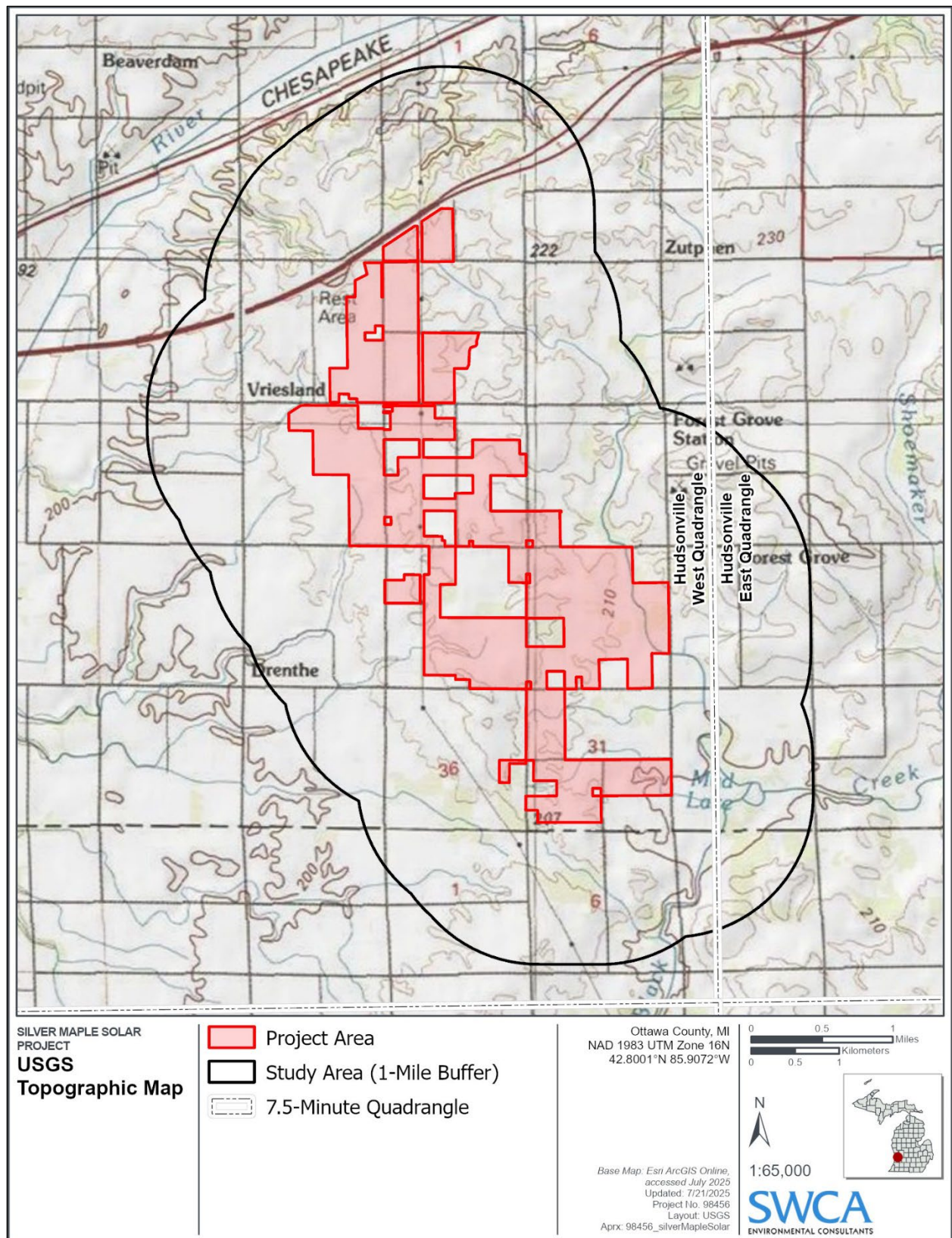


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

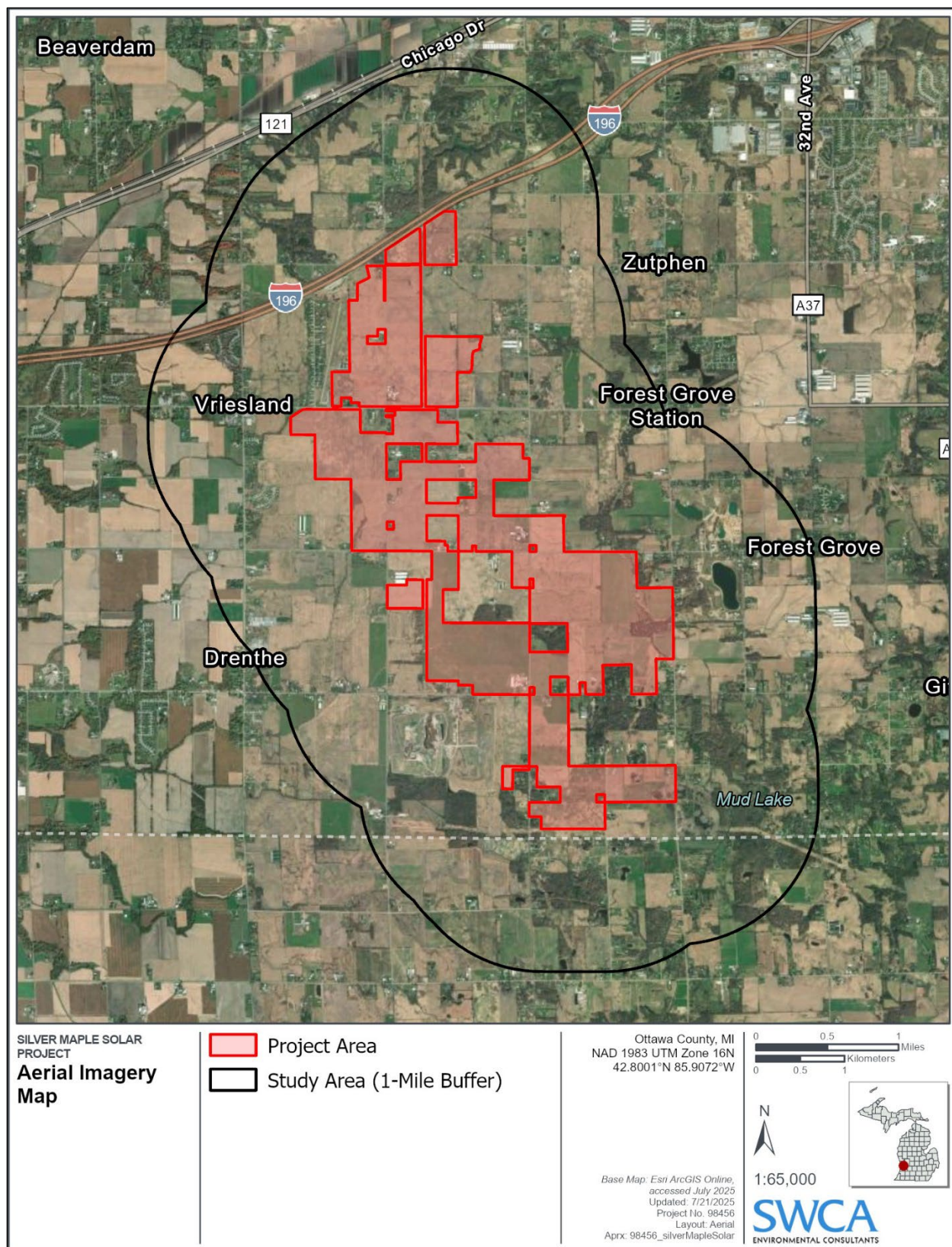


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

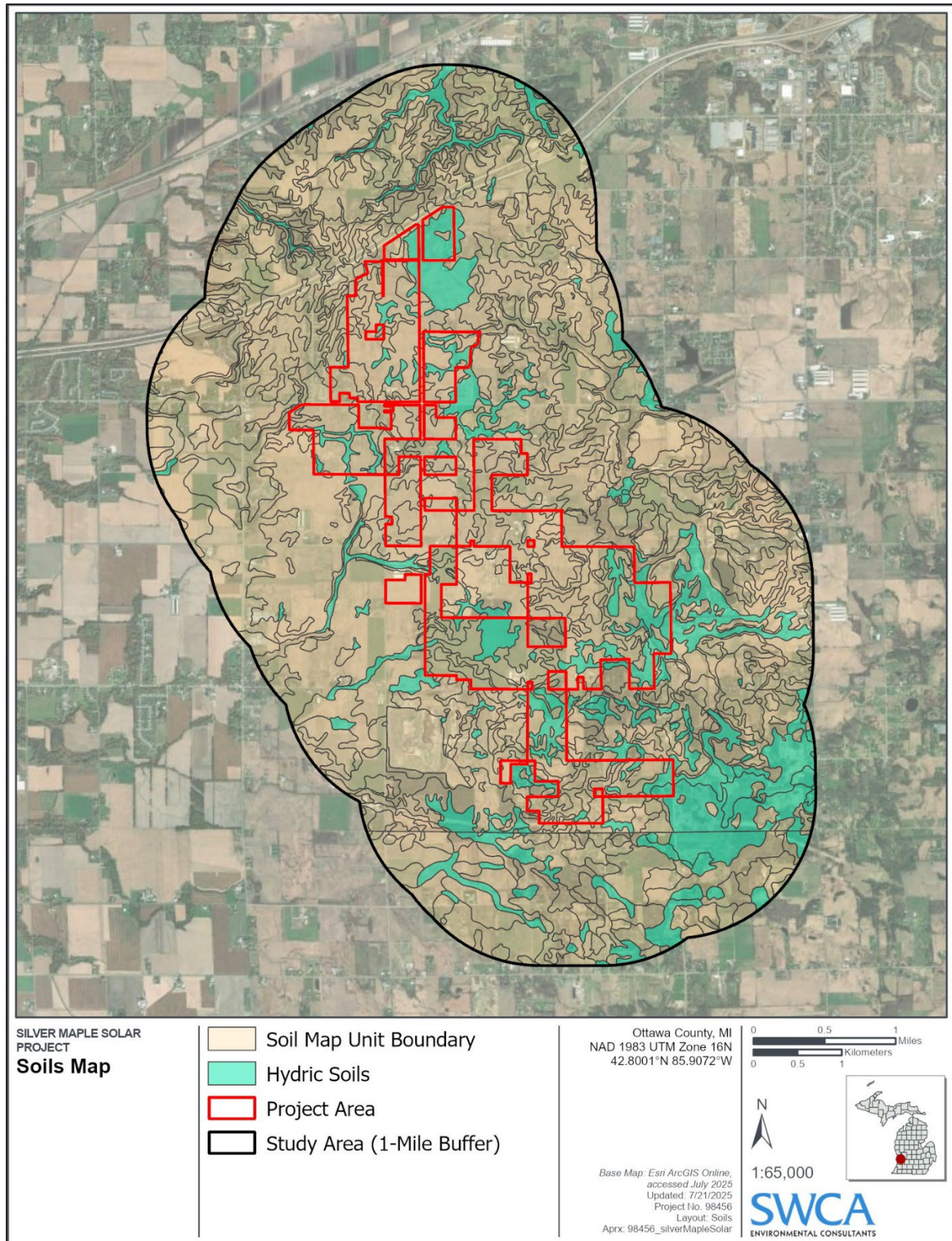


Figure A-4. Soils within the study area.

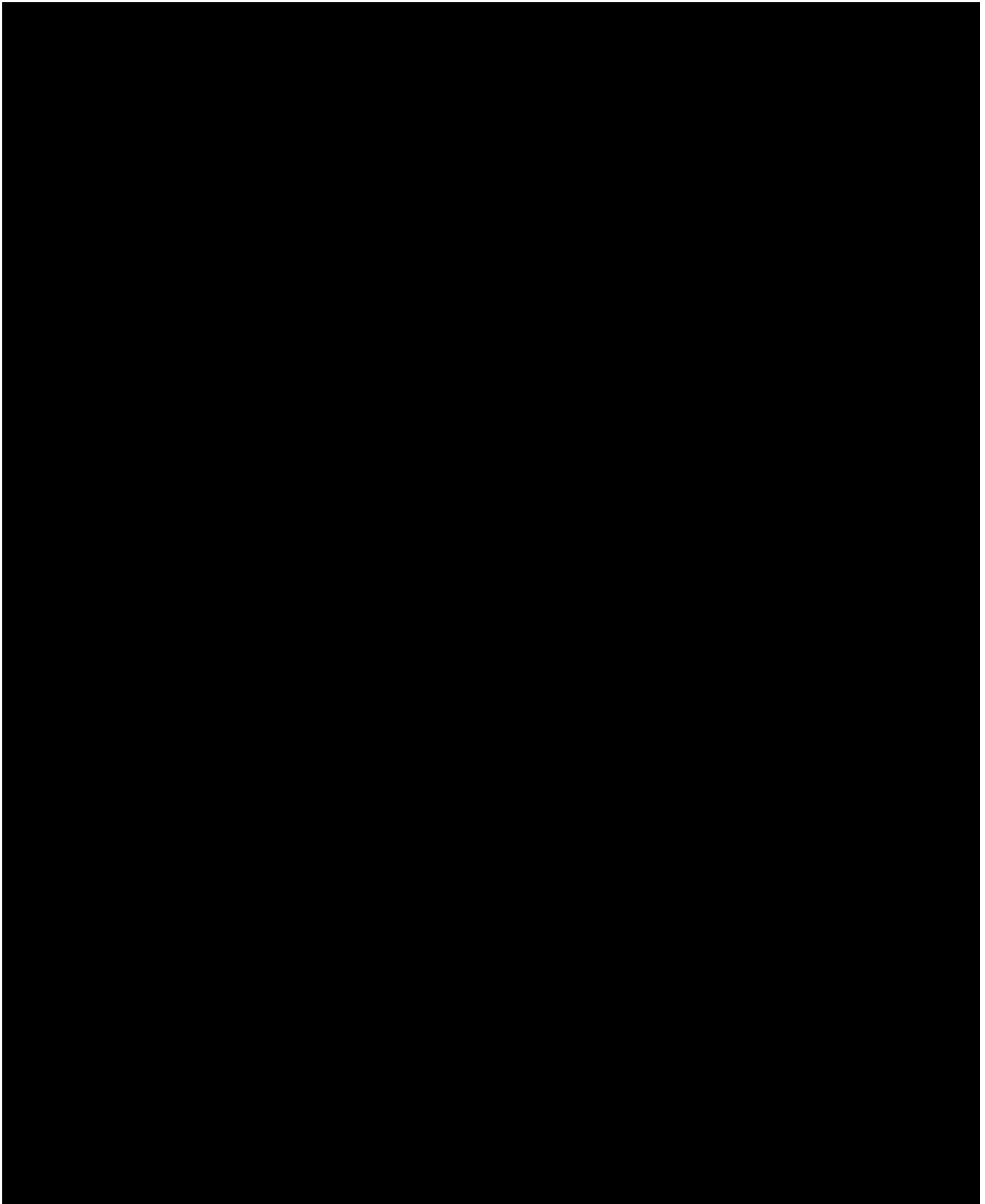


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

From: Jonathan Libbon <JLibbon@swca.com>

Sent: Friday, January 16, 2026 3:46 PM

To: Paul Halverson <phalverson@kbic-nsn.gov>

Cc: Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

Subject: Silver Maple Solar Project - Consultation Letter

Sensitivity: Private

You don't often get email from jlibbon@swca.com. [Learn why this is important](#)

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306
Bridgeville, Pennsylvania 15017
P 724.316.5547 | O 412.839.1001 ext. 5509



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From: Paul Halverson <phalverson@kbic-nsn.gov>
Sent: Tuesday, January 20, 2026 8:41 AM
To: Jonathan Libbon <JLibbon@swca.com>
Subject: RE: Silver Maple Solar Project - Consultation Letter
Sensitivity: Private

Greetings Jonathan

KBIC does not wish to participate in the section 106 review for that particular project. Thank you, Paul H.

From: Jonathan Libbon <JLibbon@swca.com>

Sent: Tuesday, January 20, 2026 9:48 AM

To: Paul Halverson <phalverson@kbic-nsn.gov>

Cc: Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

Subject: RE Silver Maple Solar Project - Consultation Letter

Thanks Paul – I appreciate your response. Have a great week!

Jonathan Libbon

724.316.5547

Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:47 PM

To alina.shively@lvd-nsn.gov <alina.shively@lvd-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_LacVieuxDesertBandLakeSuperiorChippewaIndians_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Alina Shively
Tribal Historic Preservation Officer
Lac Vieux Desert Band of Lake Superior Chippewa Indians
P.O. Box 249
Watersmeet, MI 49969
Via Email: alina.shively@lvd-nsn.gov

Dear Alina Shively,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

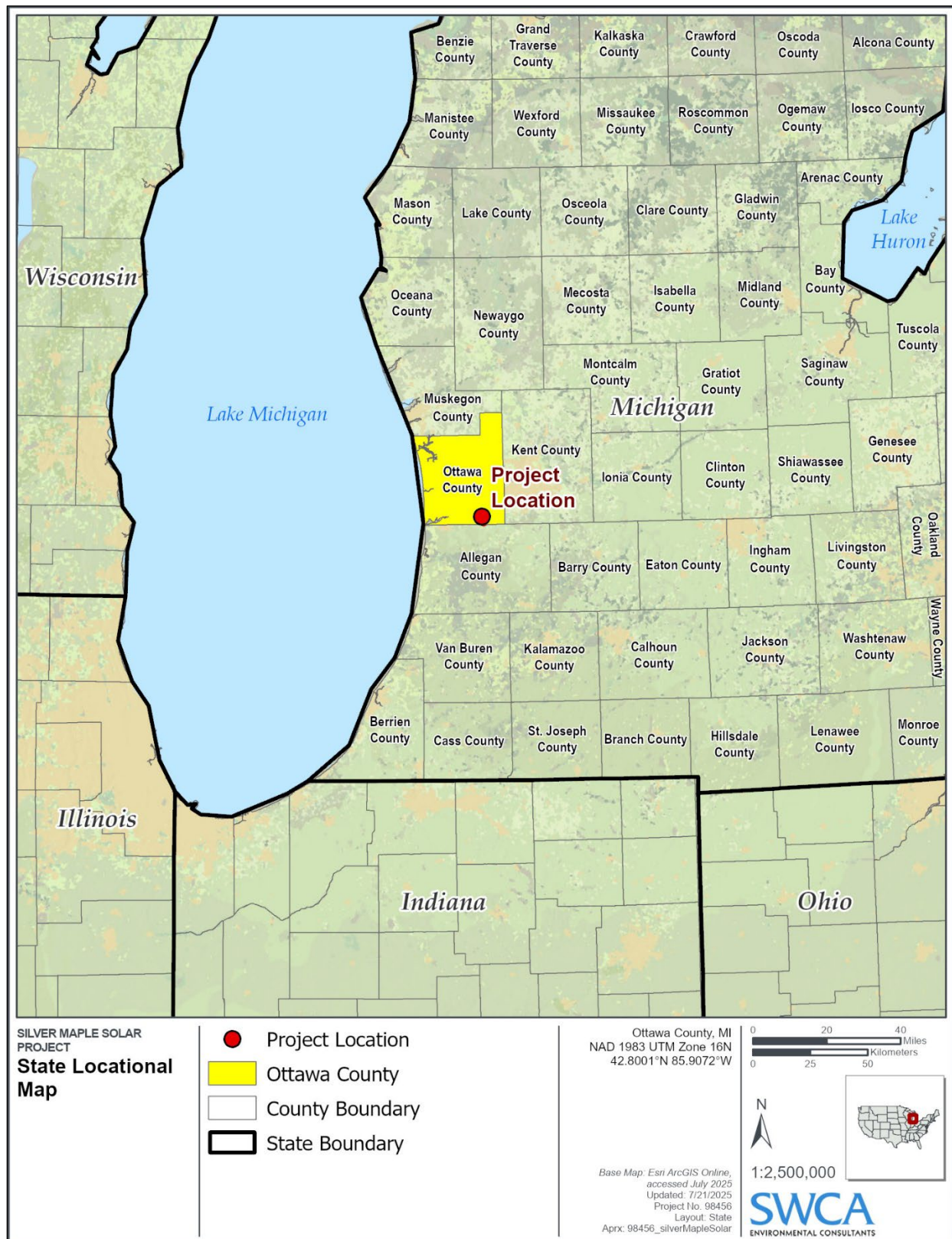


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

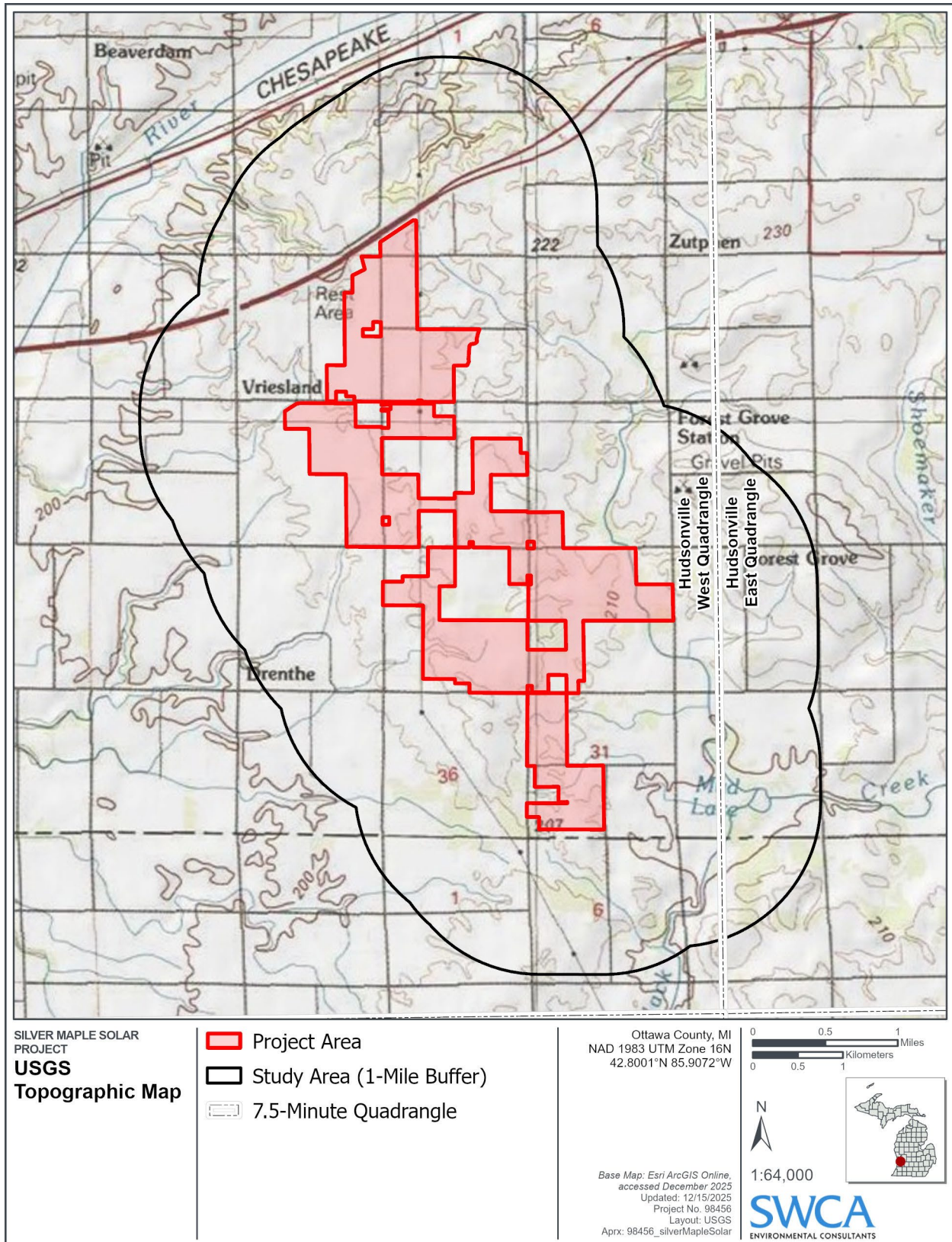


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

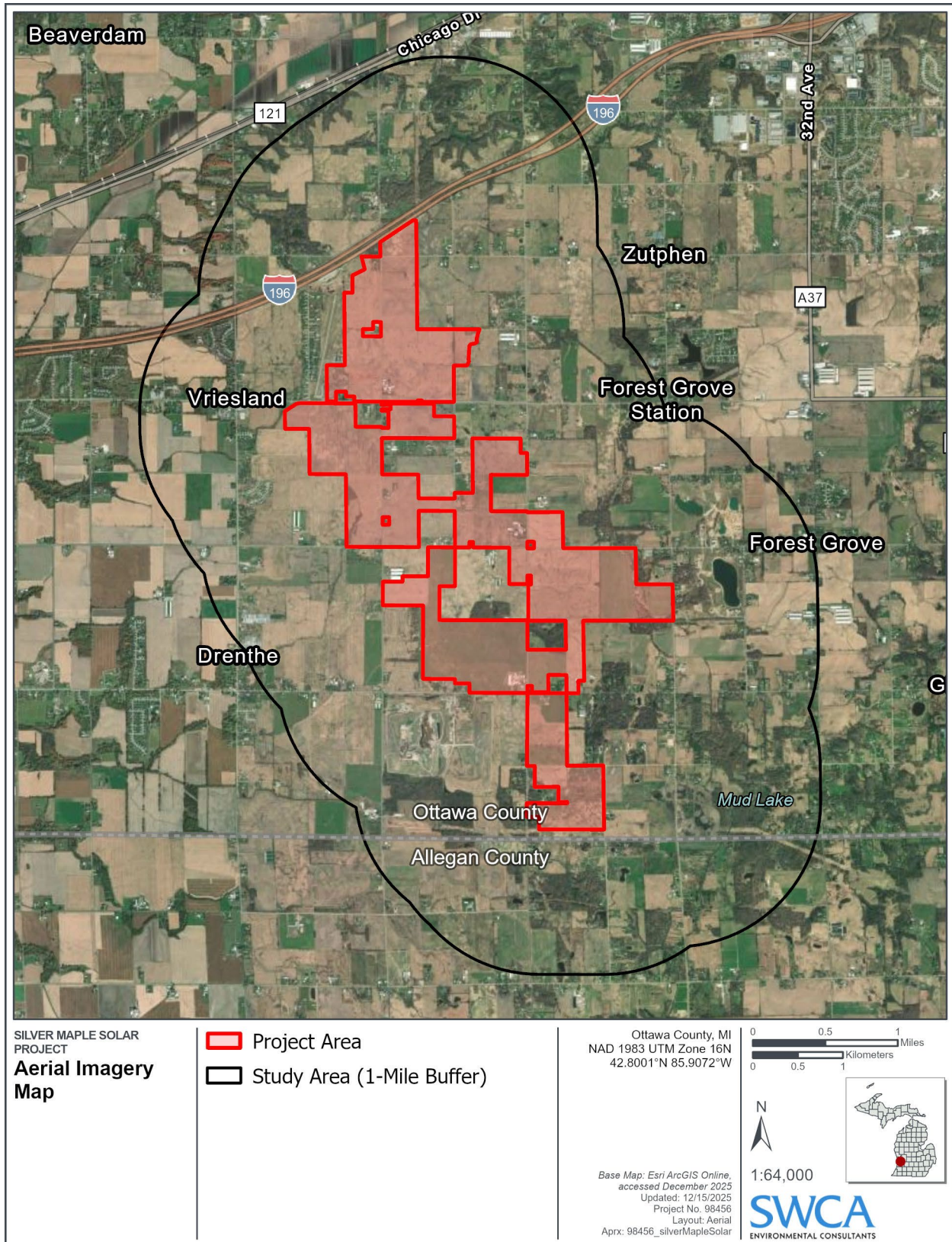


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' stacked vertically in a large, light blue, serif font.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

RWE Clean Energy, LLC
353 North Clark Street, 30th Floor
Chicago, Illinois 60654
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Prepared by

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James G. Parker, M.A., RPA
Megan Daniels, M.P.S.
Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 200T303; the site is within the current project area (see section 2.6 below for discussion of 200T303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 151

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

[REDACTED]

2.8.1 Precontact Archaeological Sensitivity

[REDACTED]

[REDACTED]

2.8.2 Potential for Postcontact Archaeological Sites

[REDACTED]

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

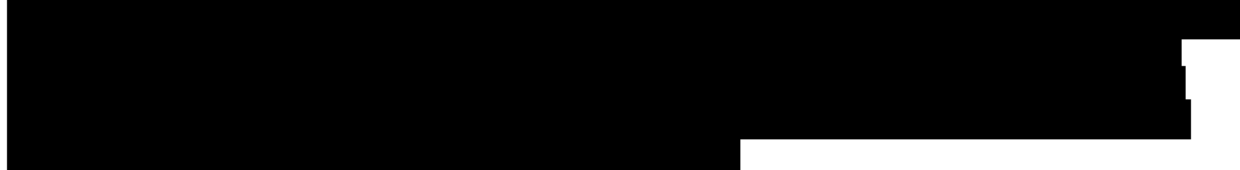
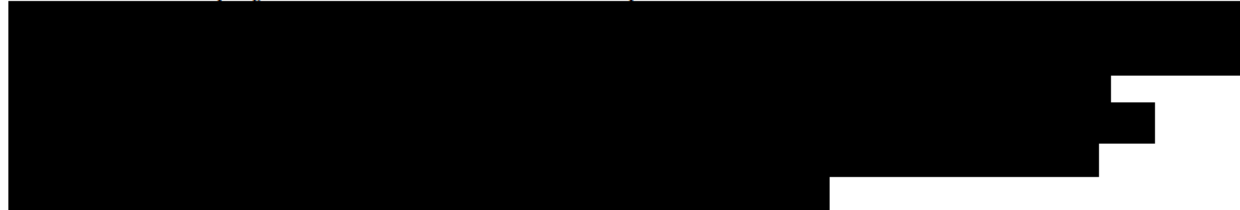
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

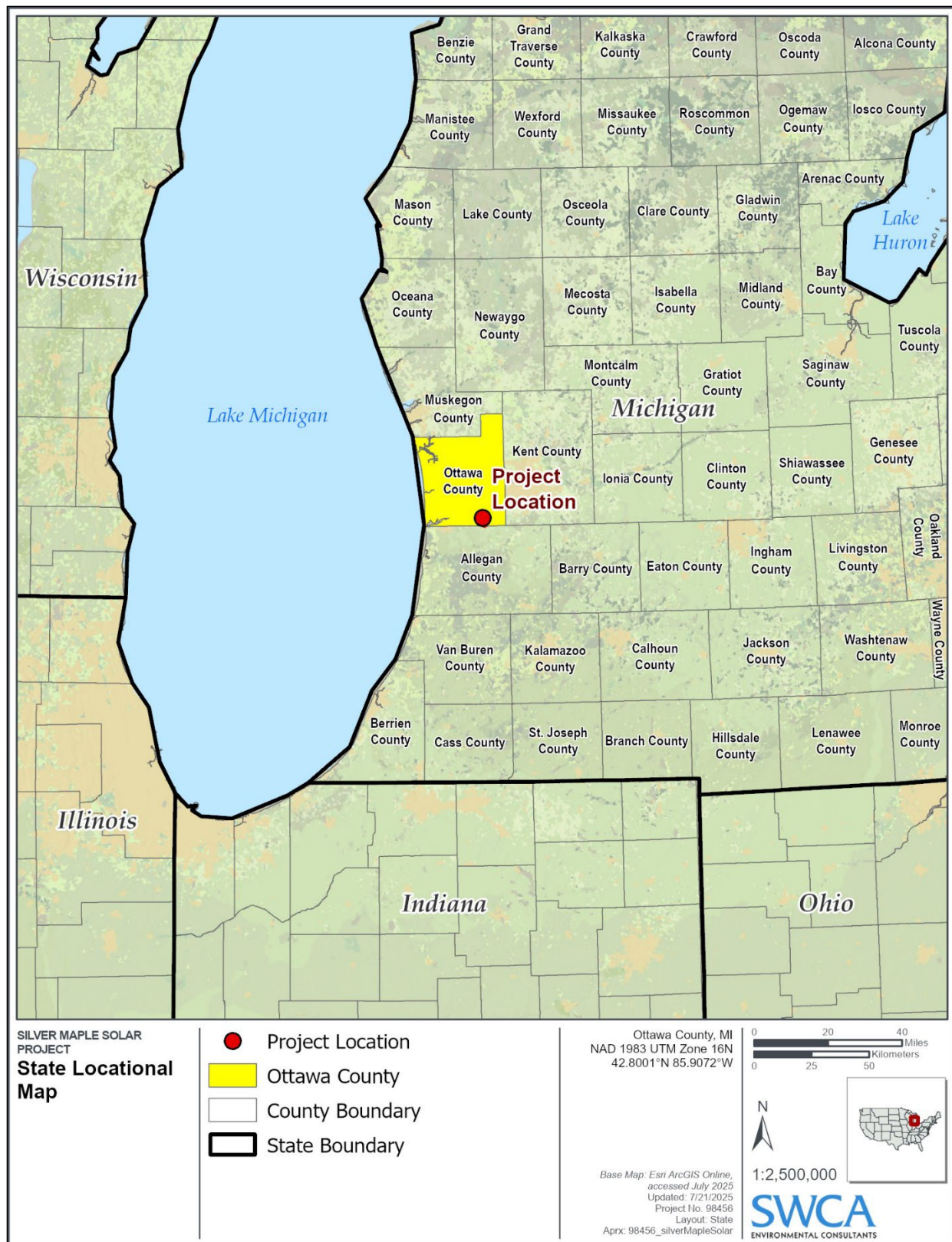


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

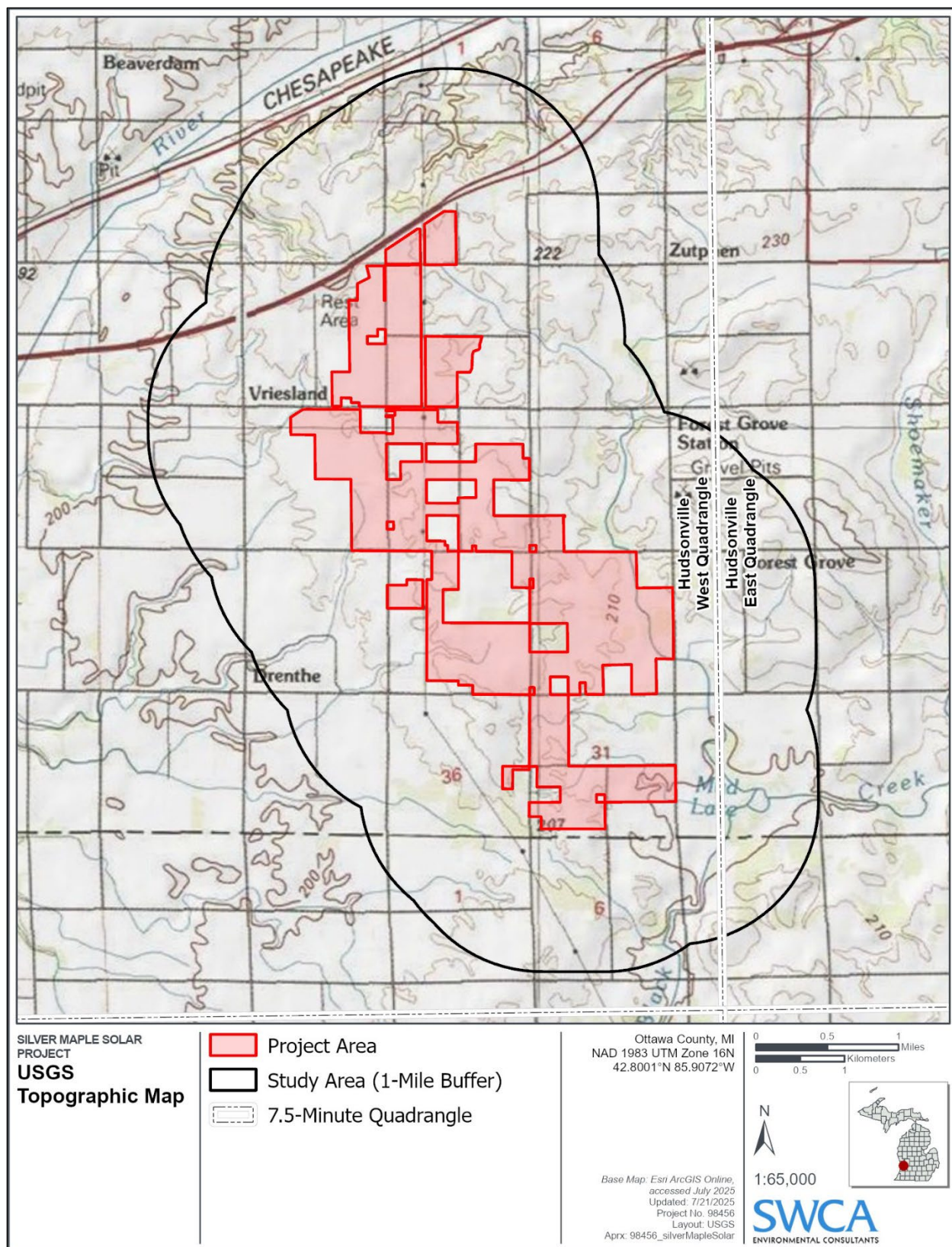


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

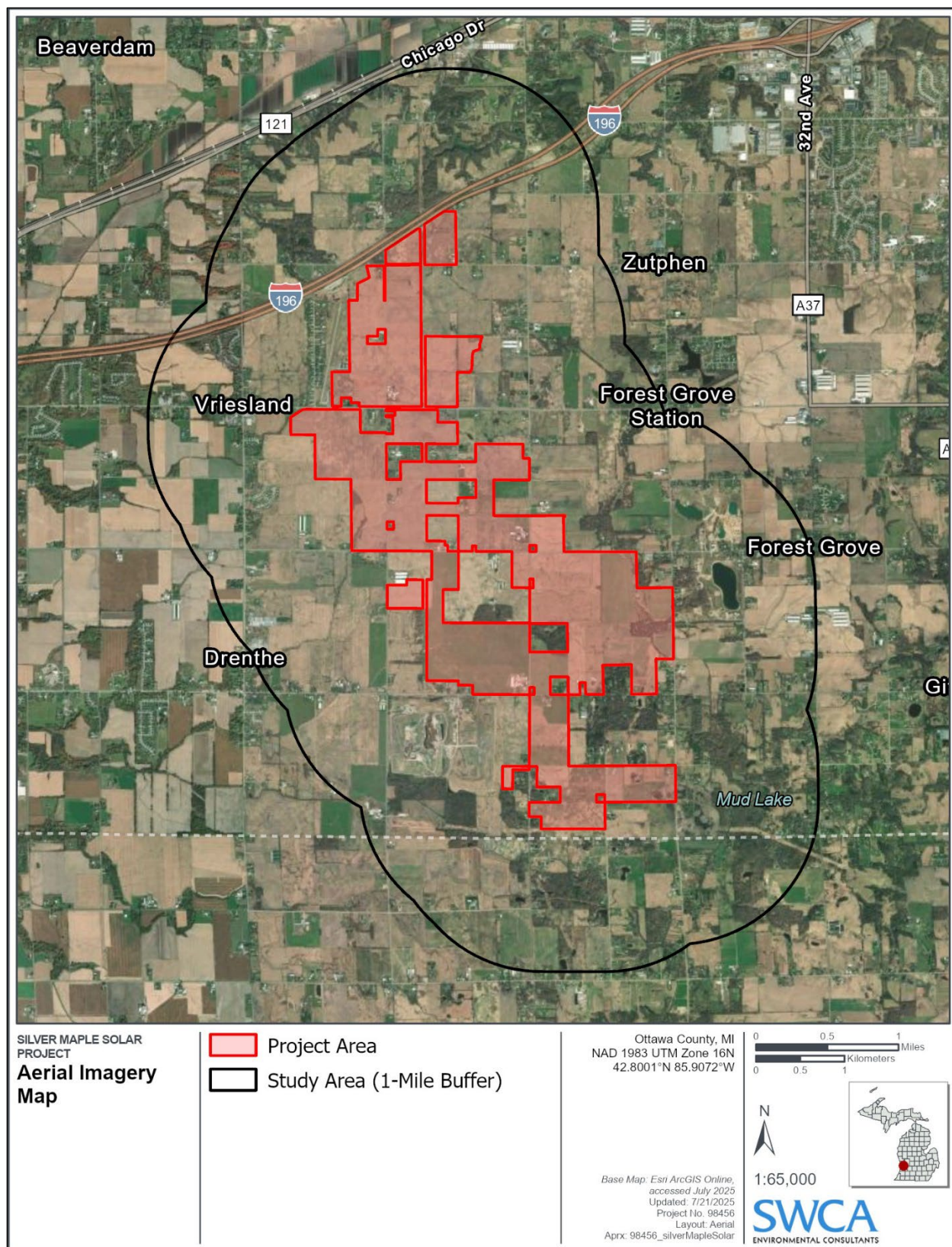


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

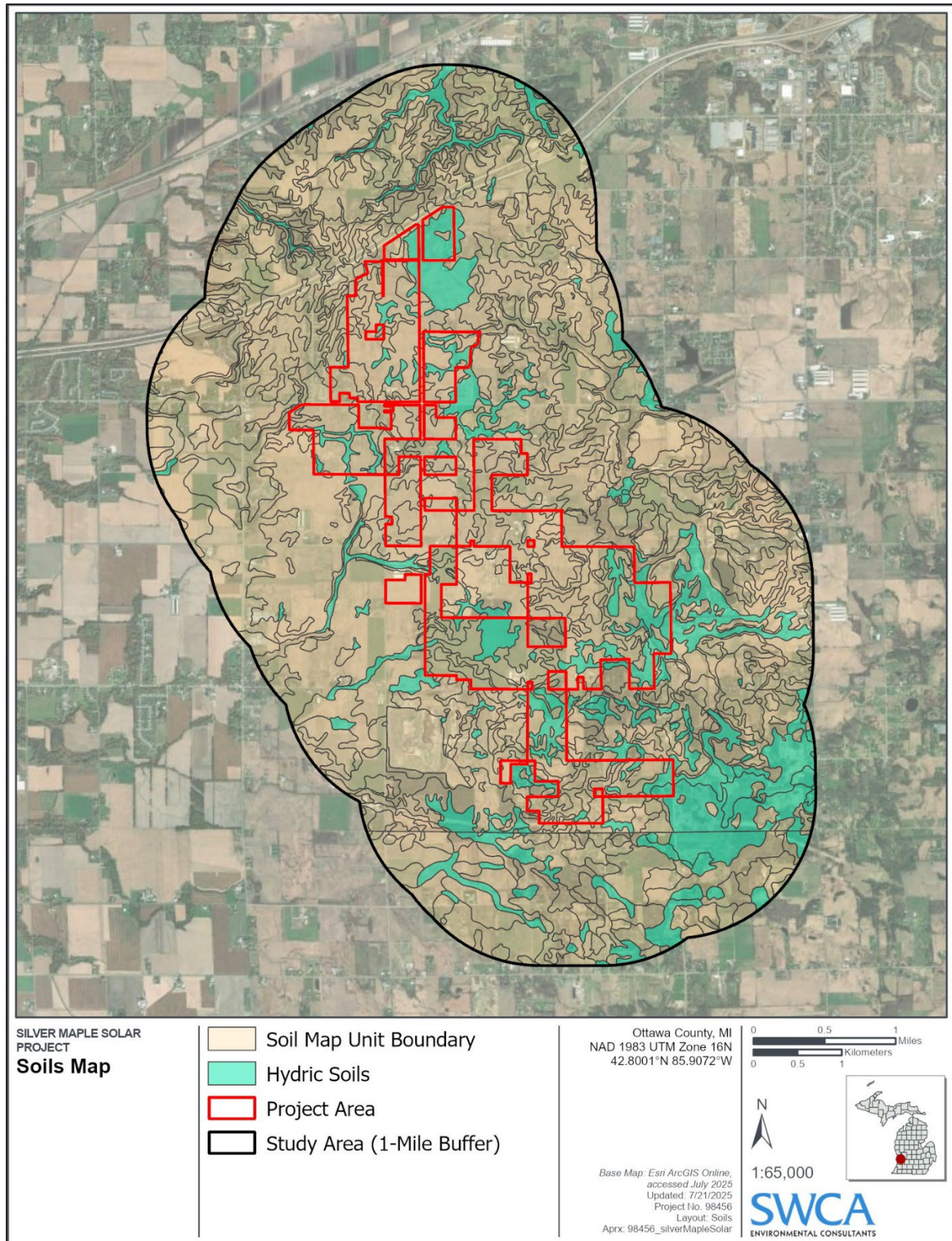


Figure A-4. Soils within the study area.

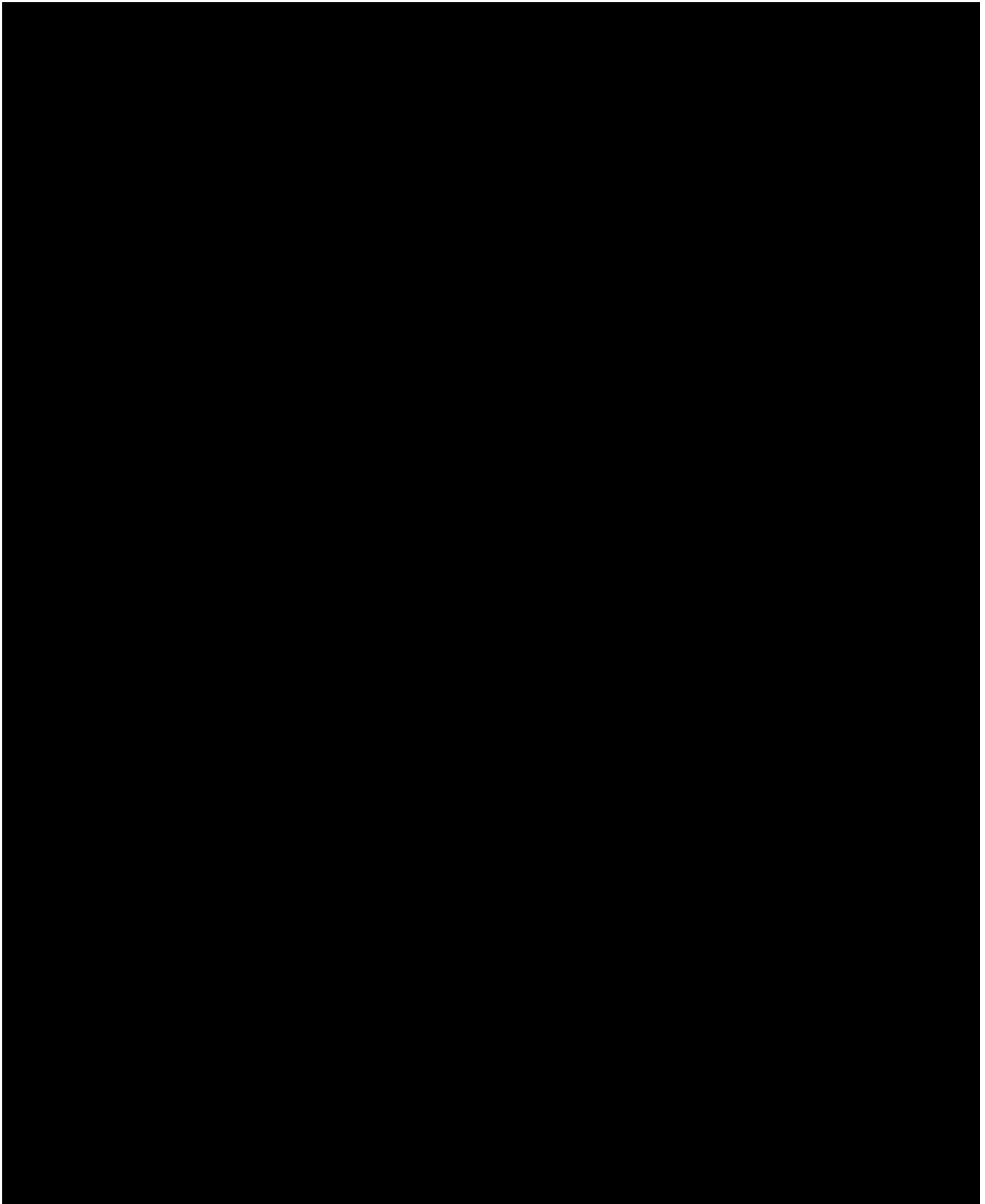


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Little River Band of Ottawa Indians



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:47 PM

To coreyawells@lrboi-nsn.gov <coreyawells@lrboi-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_LittleRiverBandOttawaIndians_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Corey Wells
Tribal Historic Preservation Officer
Little River Band of Ottawa Indians
2608 Government Center Drive
Manistee, MI 49660
Via Email: coreyawells@lrboi-nsn.gov

Dear Corey Wells,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

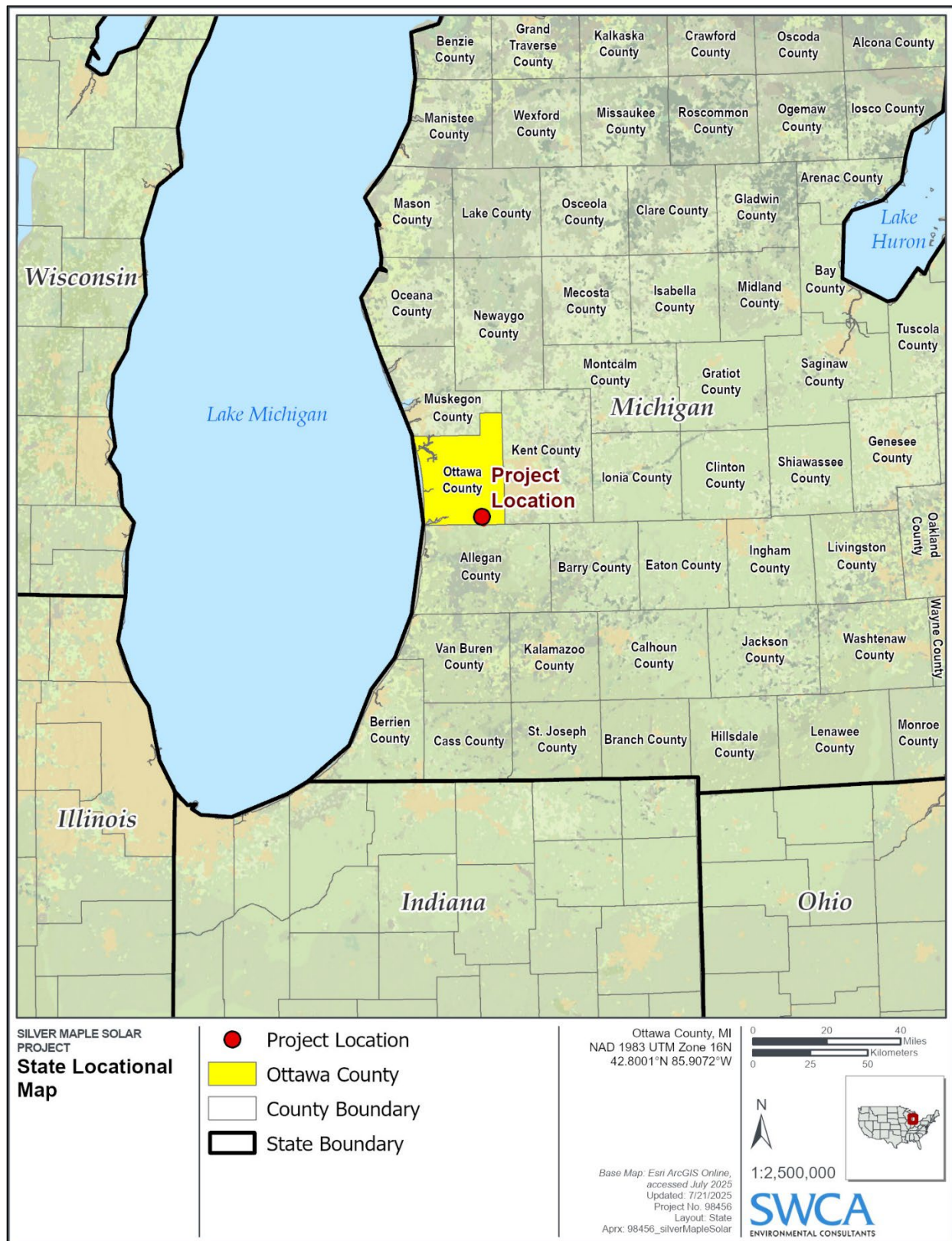


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

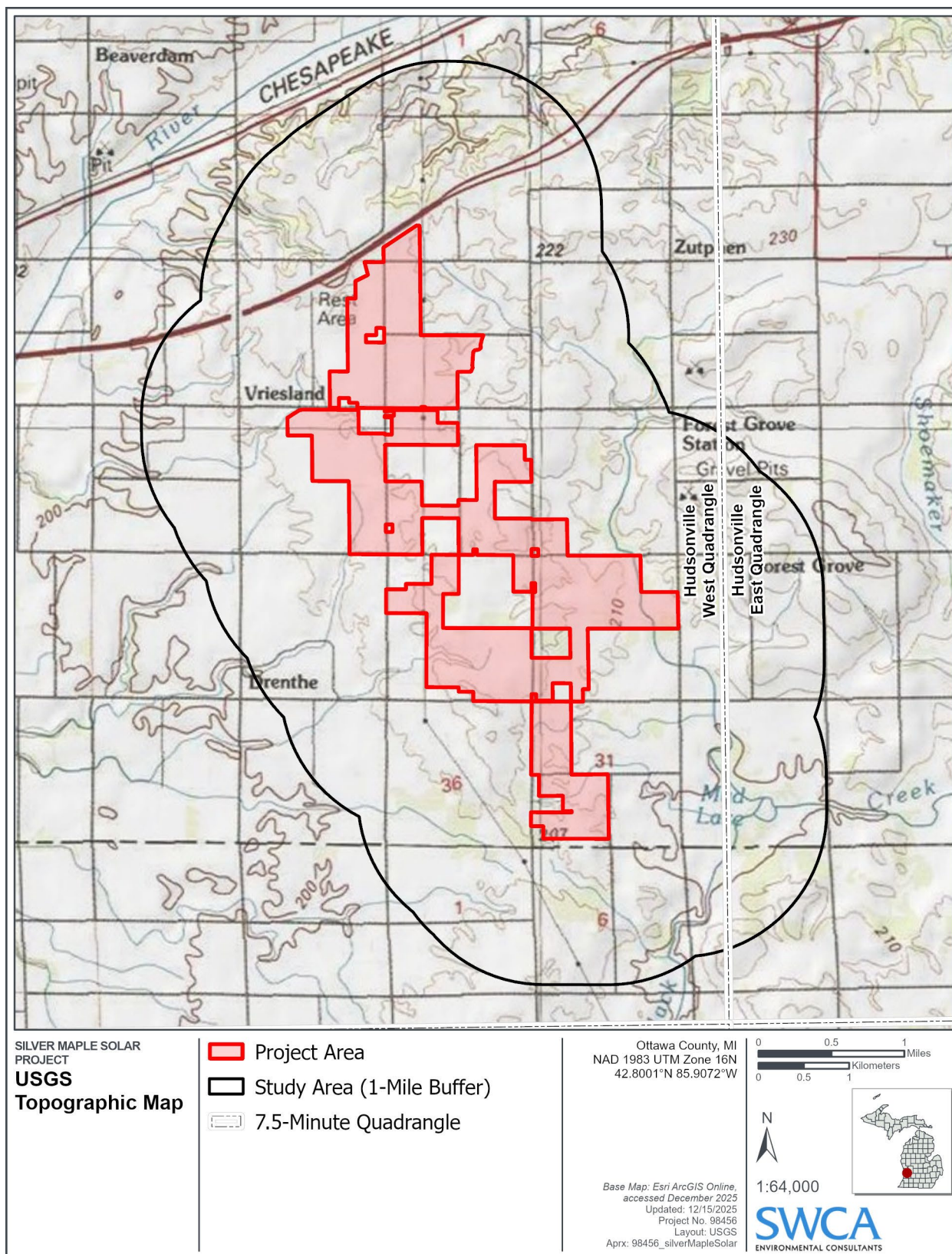


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

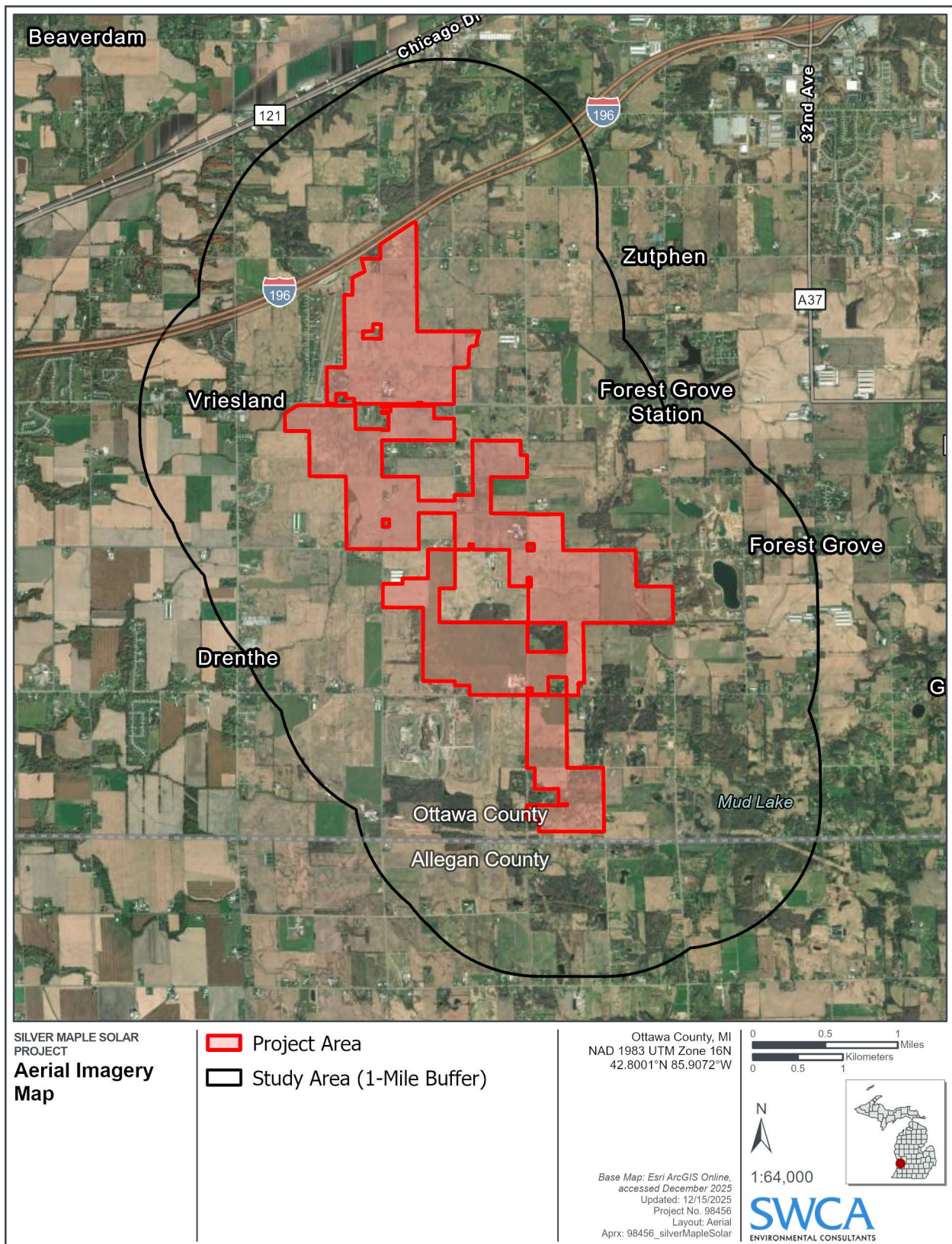


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA (Soil Water Conservation Agency) is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' in a large, stylized, light blue font, stacked one above the other.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Prepared by

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 183

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

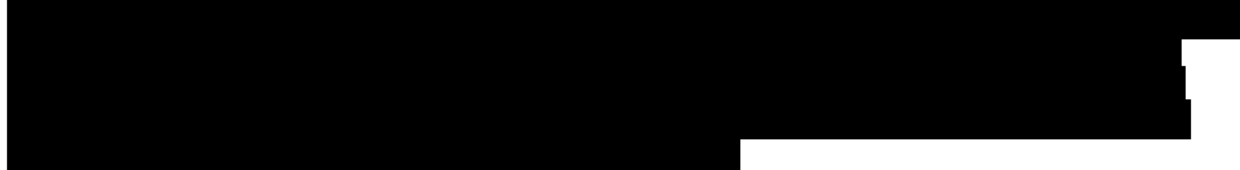
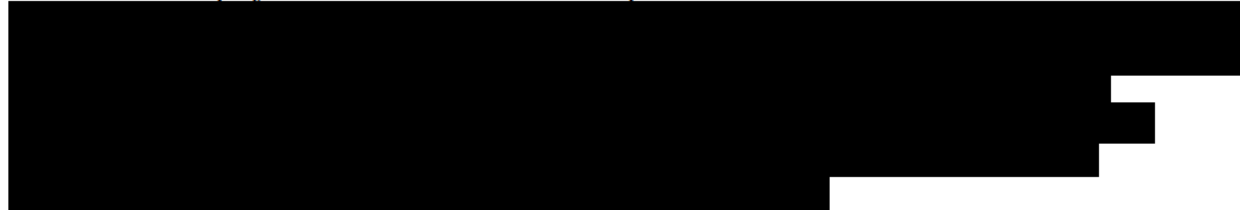
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

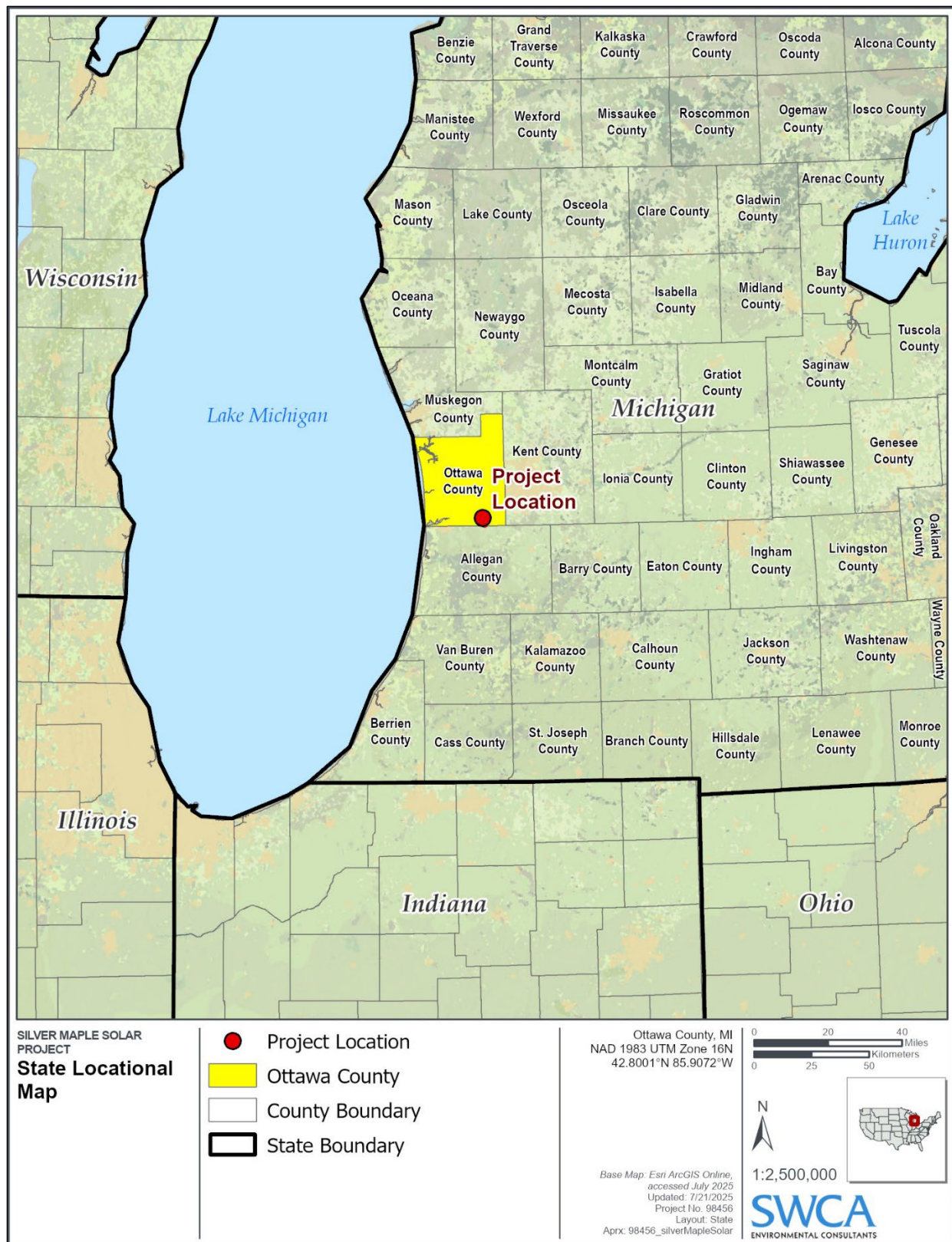


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

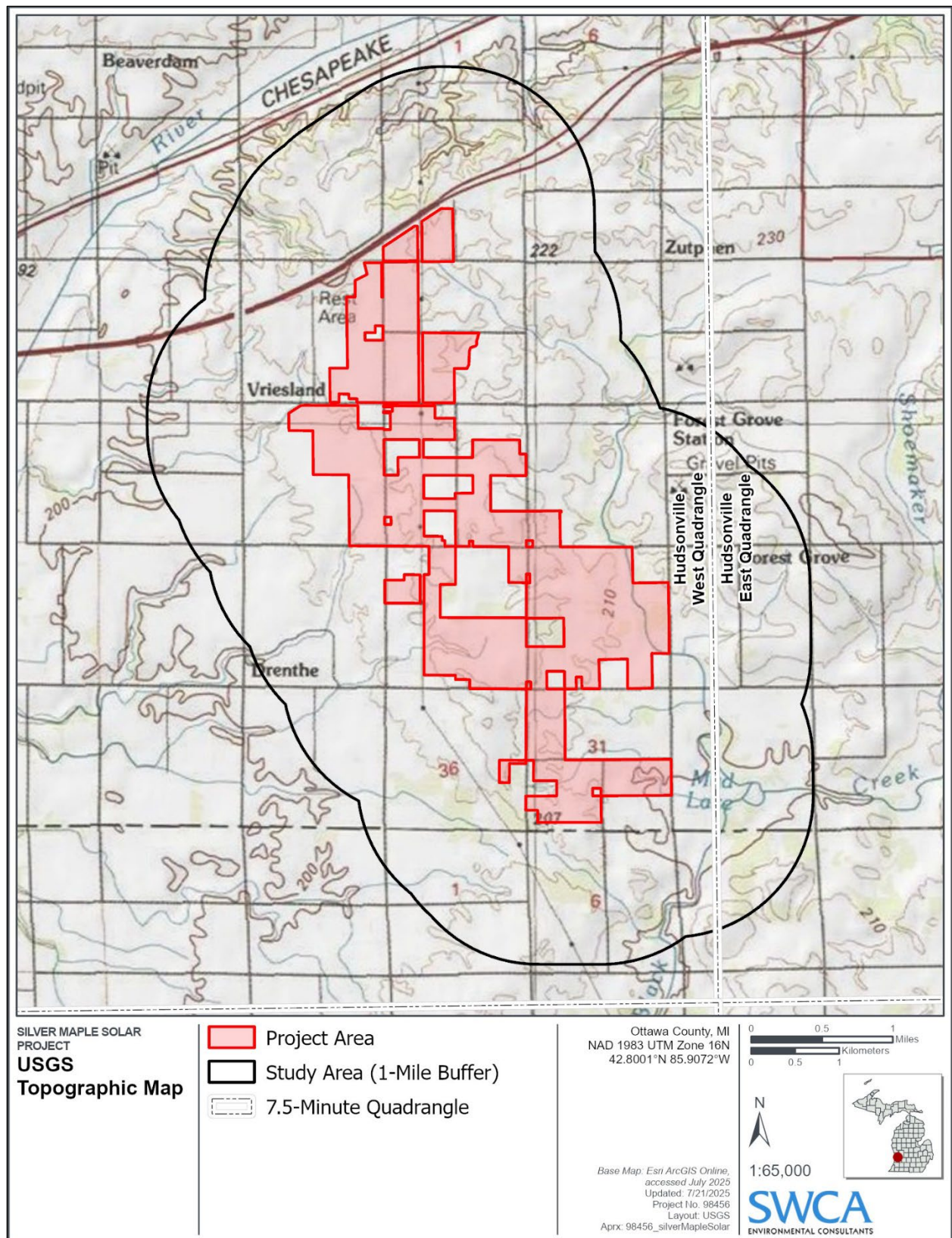


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

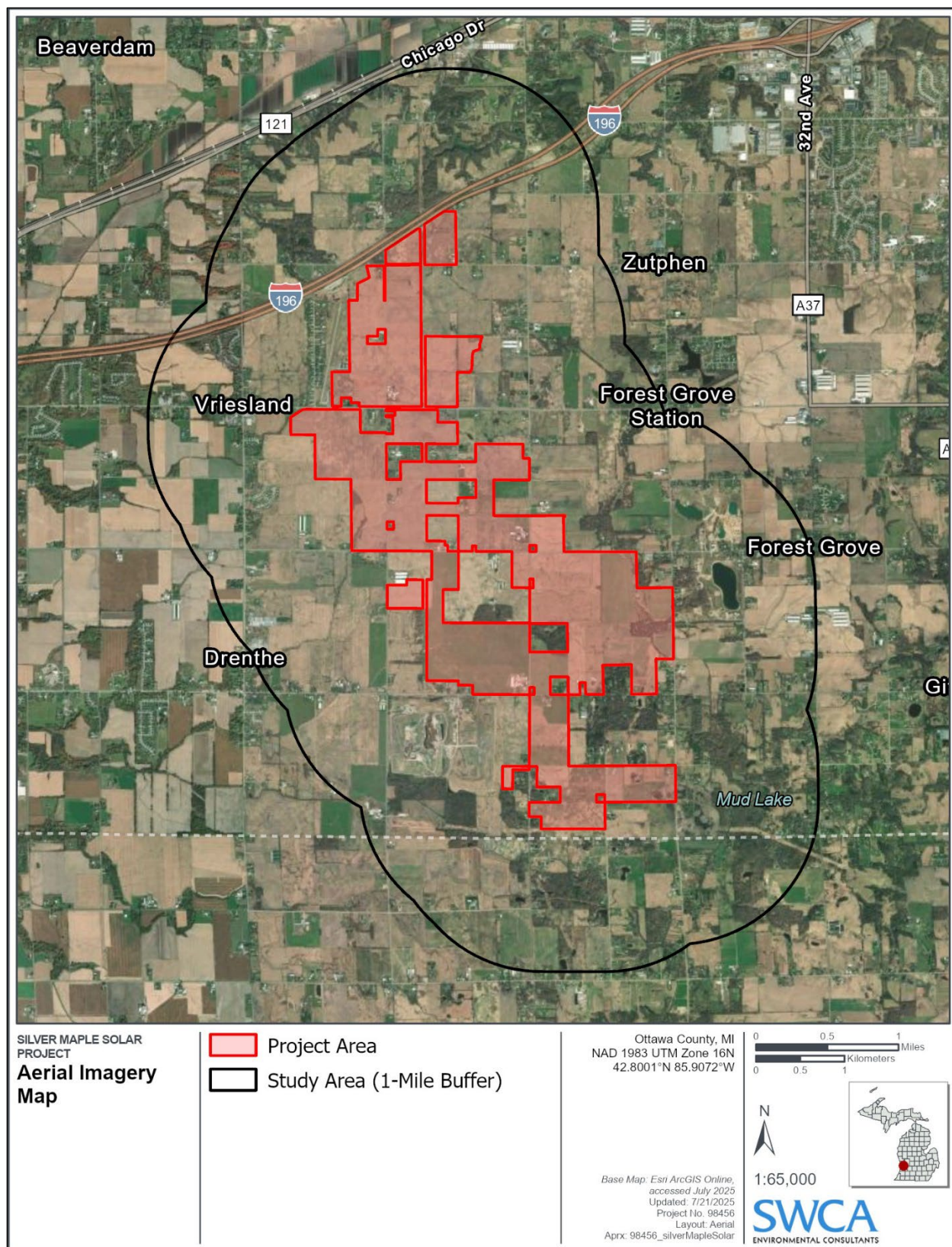


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

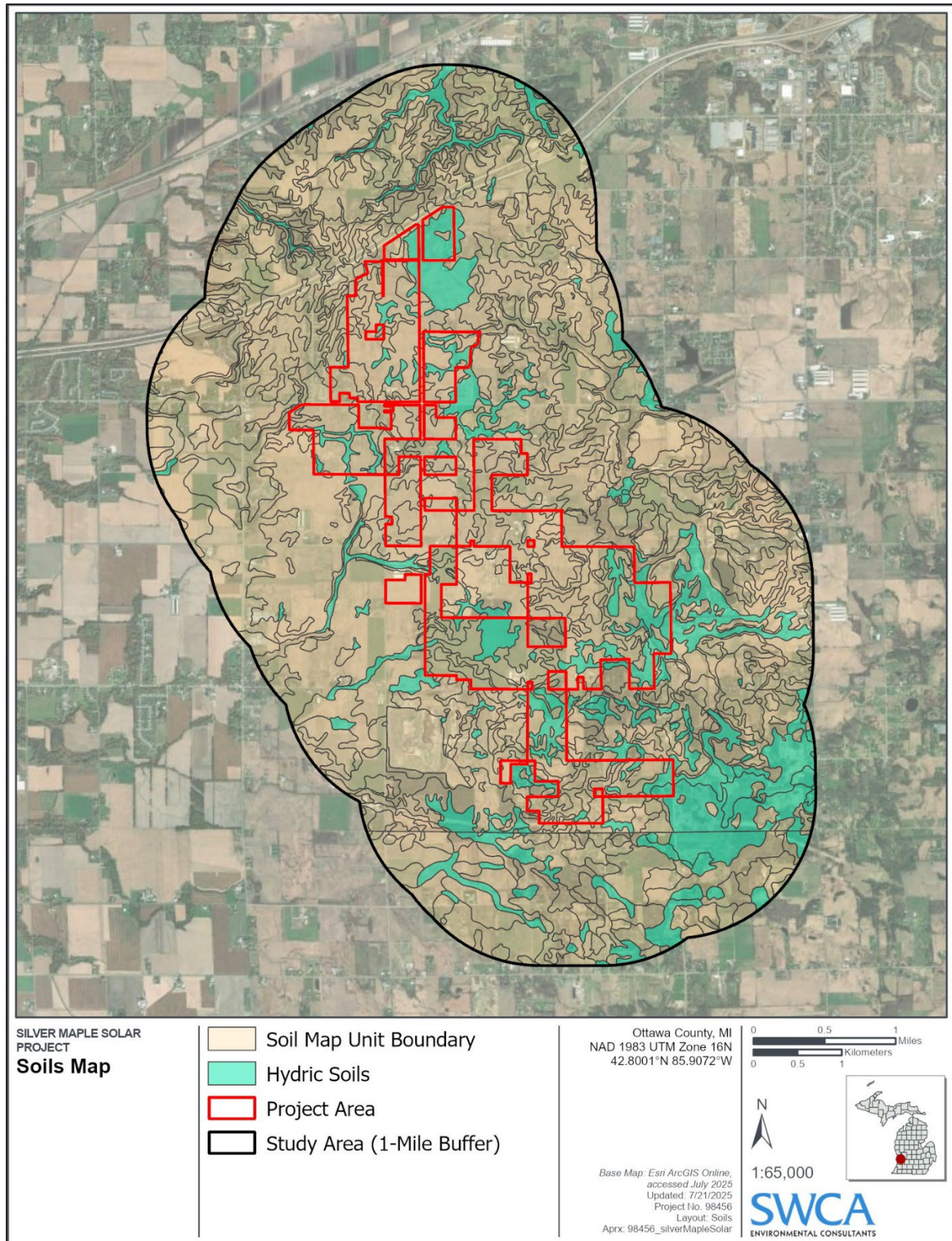


Figure A-4. Soils within the study area.

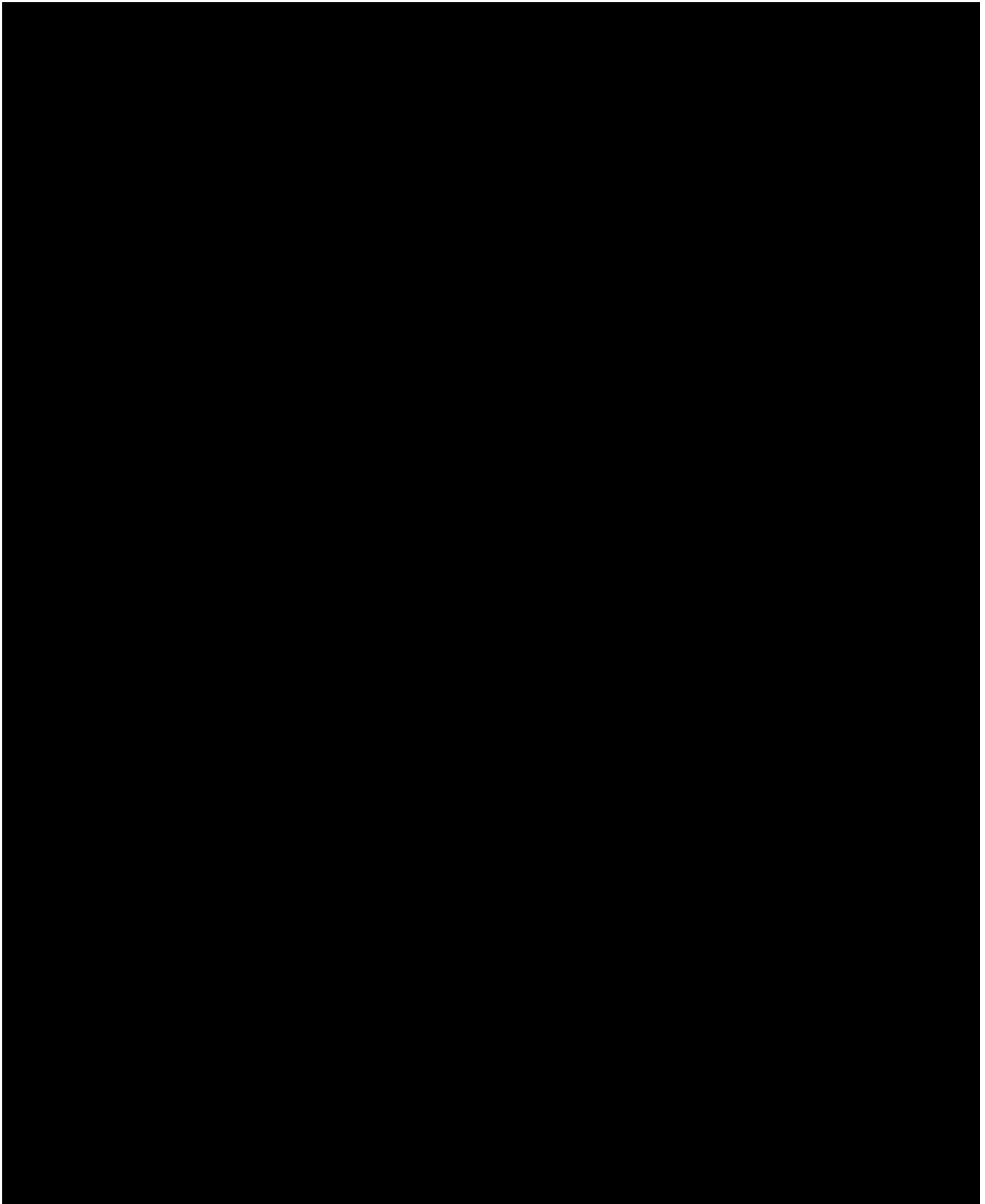


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Little Traverse Bay Bands of Odawa Indians, Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:46 PM

To mwright@ltbbodawa-nsn.gov <mwright@ltbbodawa-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver Maple Consultation LTR_15Jan2026_LittleTraverseBayBandsOdawaIndians_signed.pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Mae Wright
Tribal Historic Preservation Officer
Little Traverse Bay Bands of Odawa Indians
7500 Odawa Circle
Harbor Springs, MI 49740
Via Email: mwright@ltbbodawa-nsn.gov

Dear Mae Wright,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

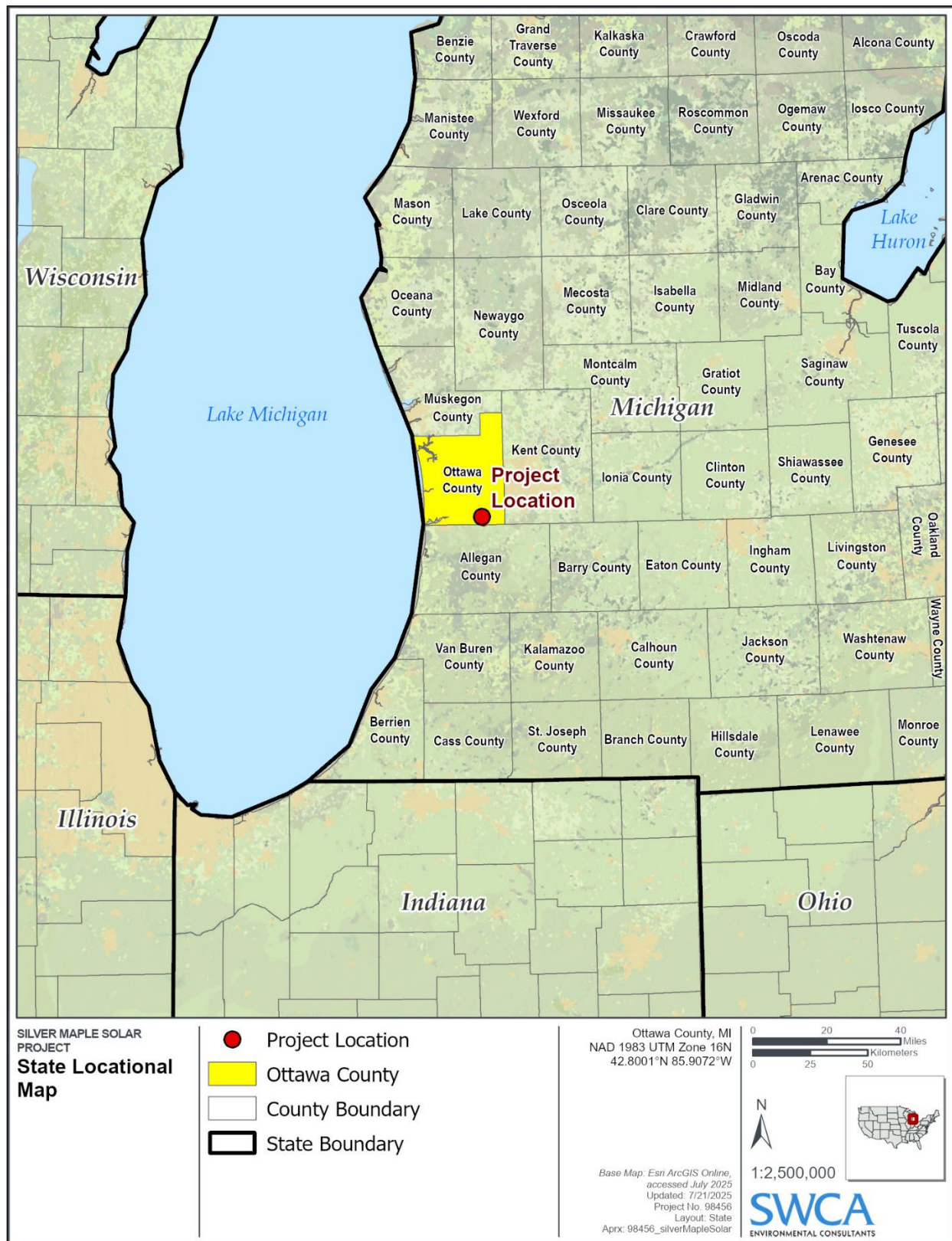


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

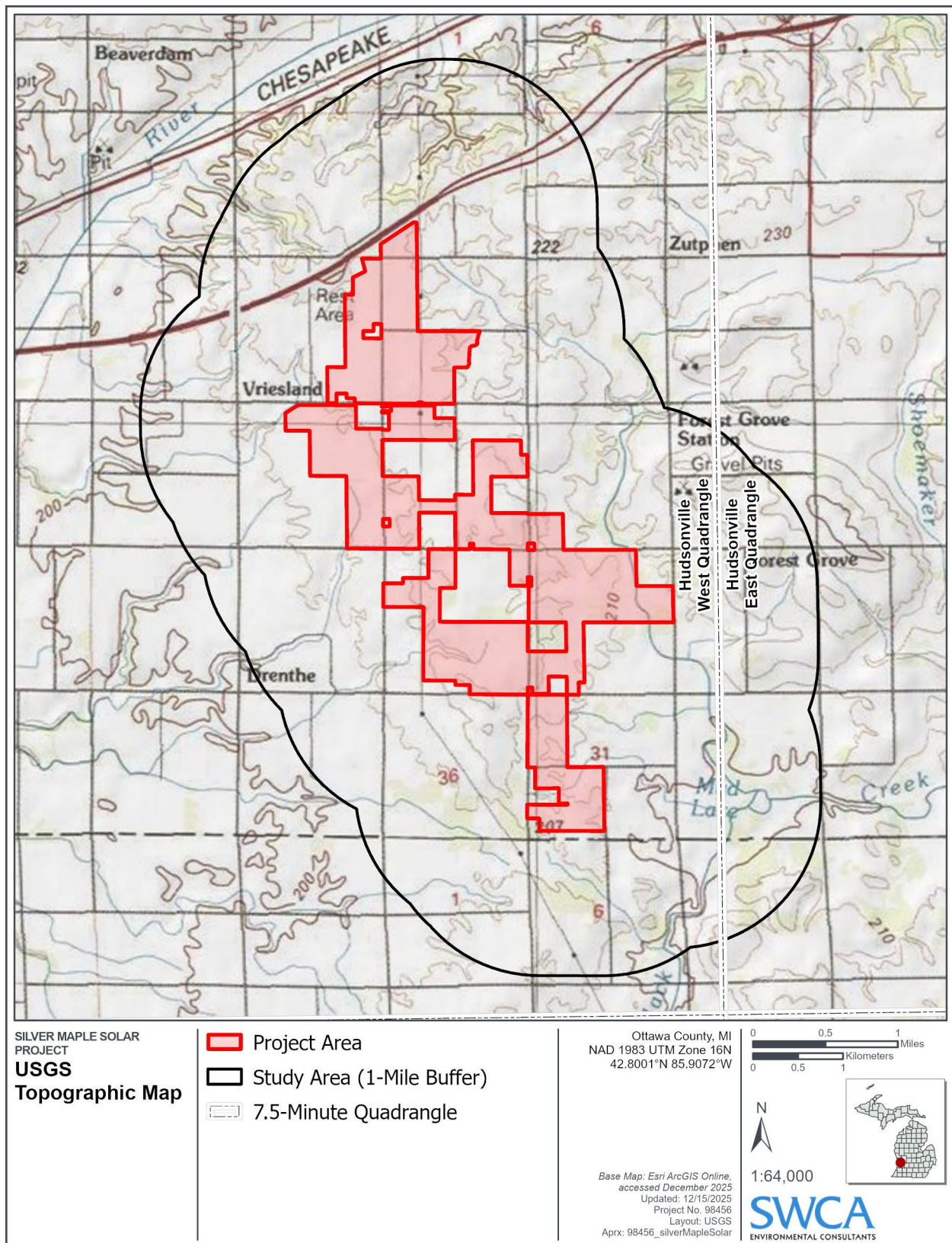


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

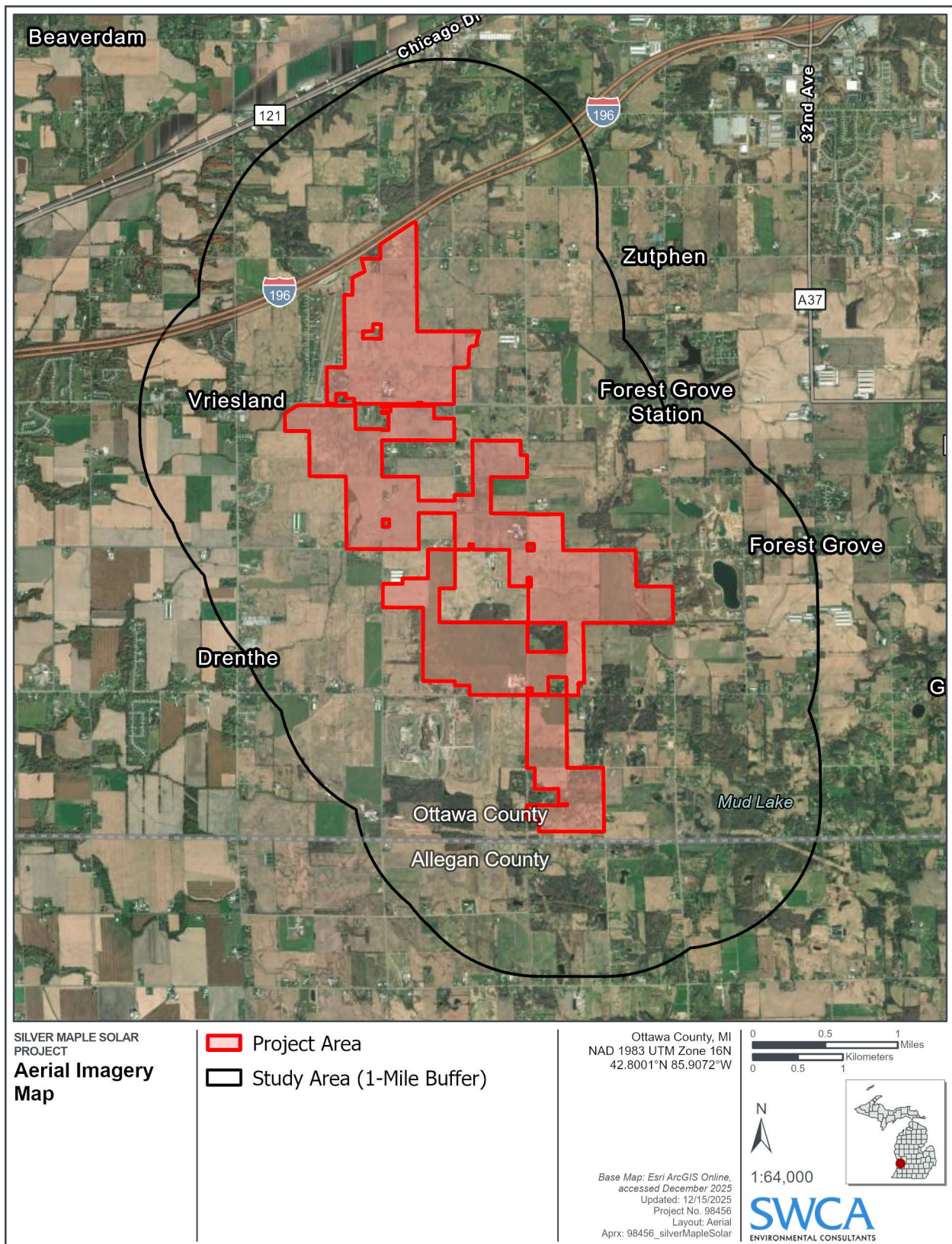


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 215

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

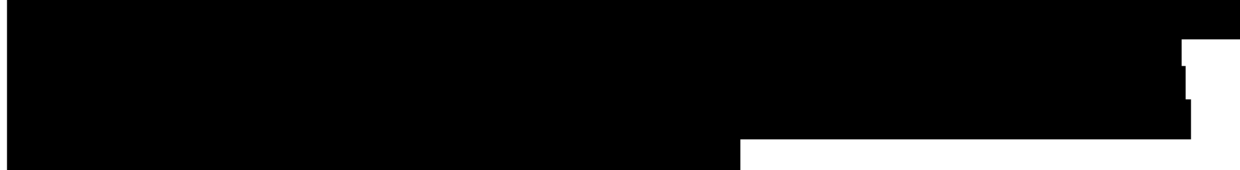
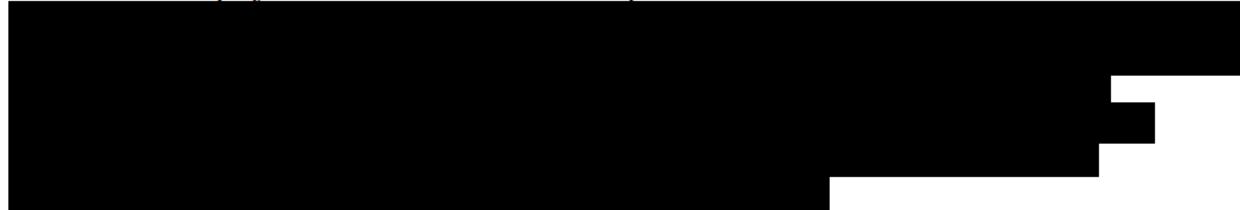
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

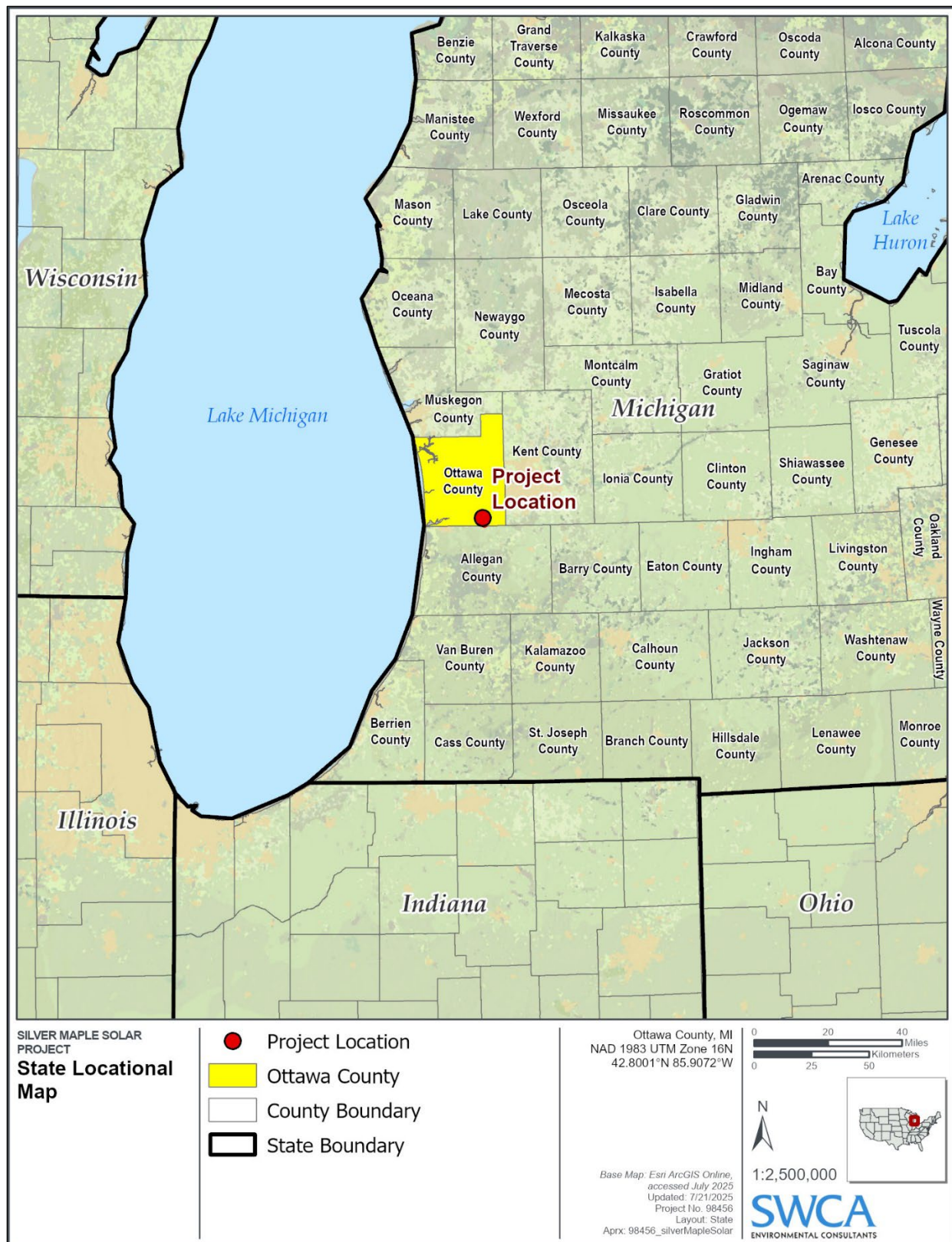


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

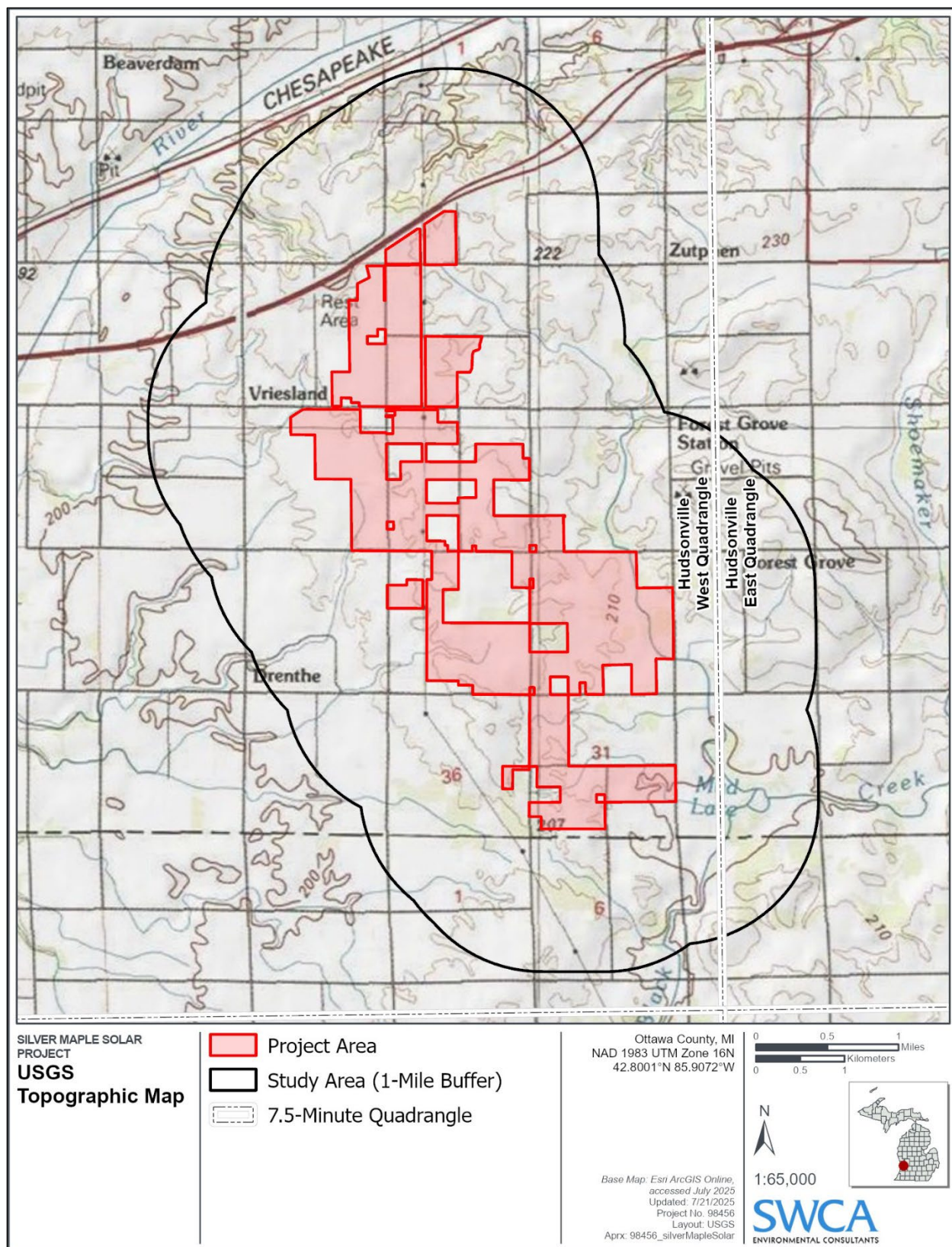


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

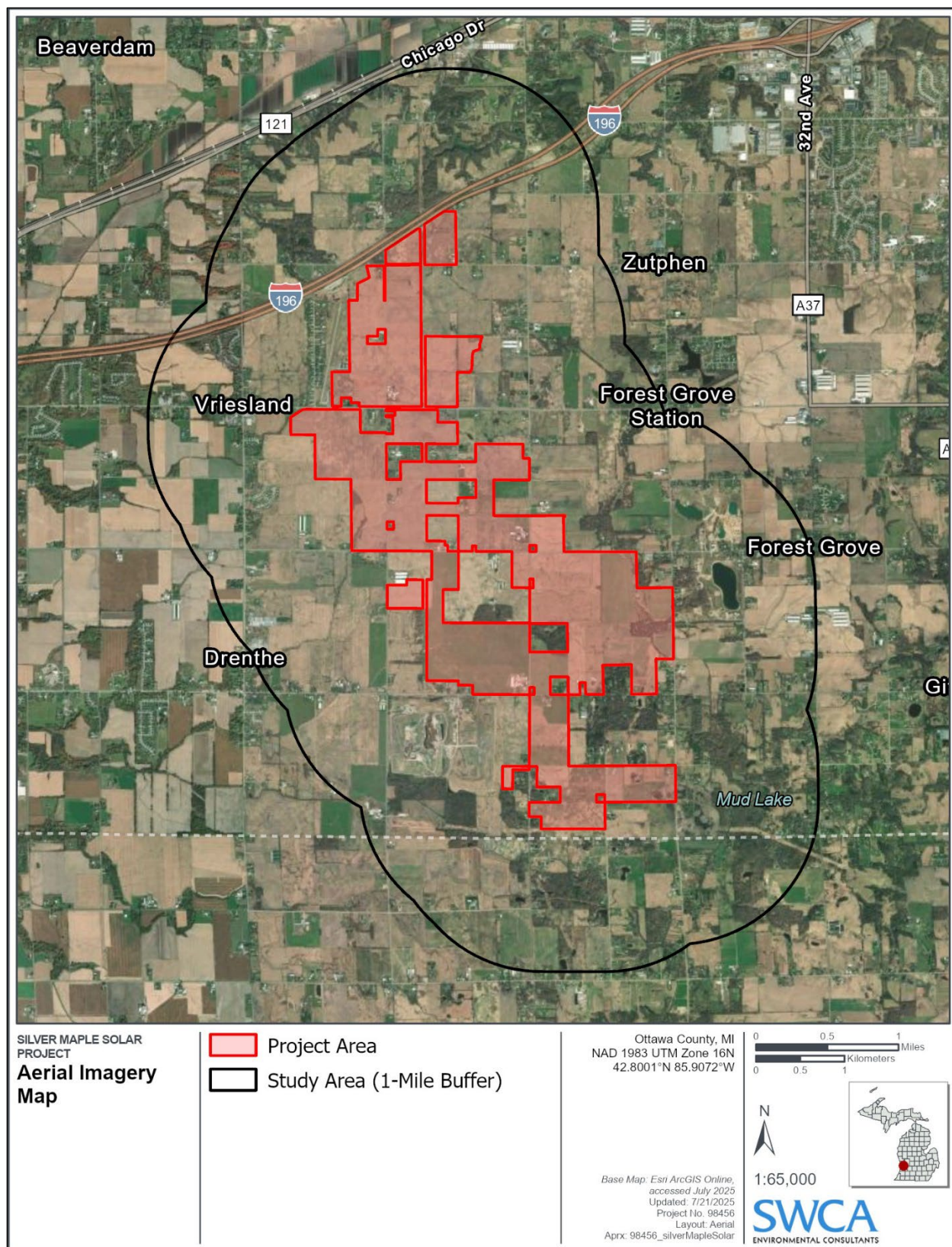


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

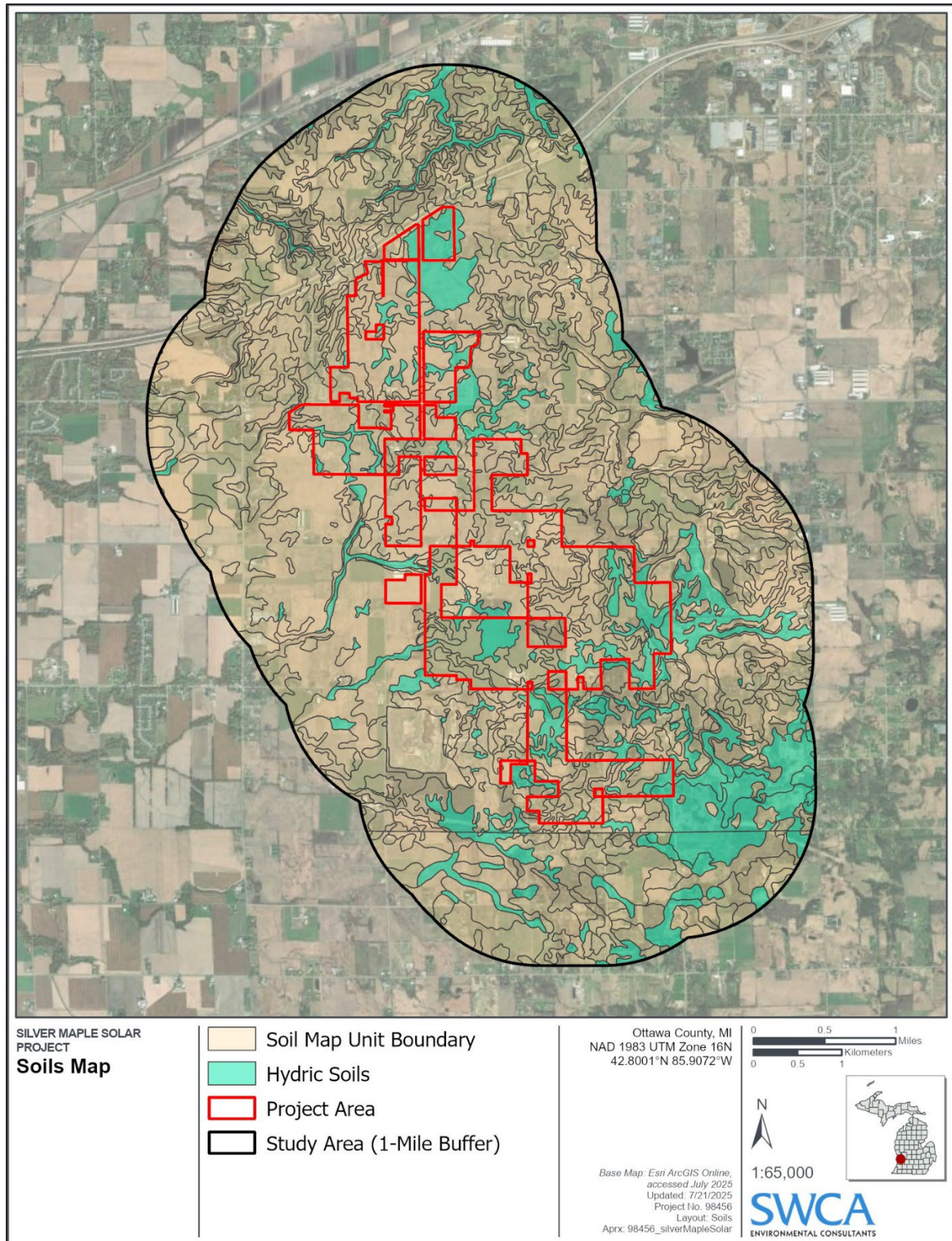


Figure A-4. Soils within the study area.

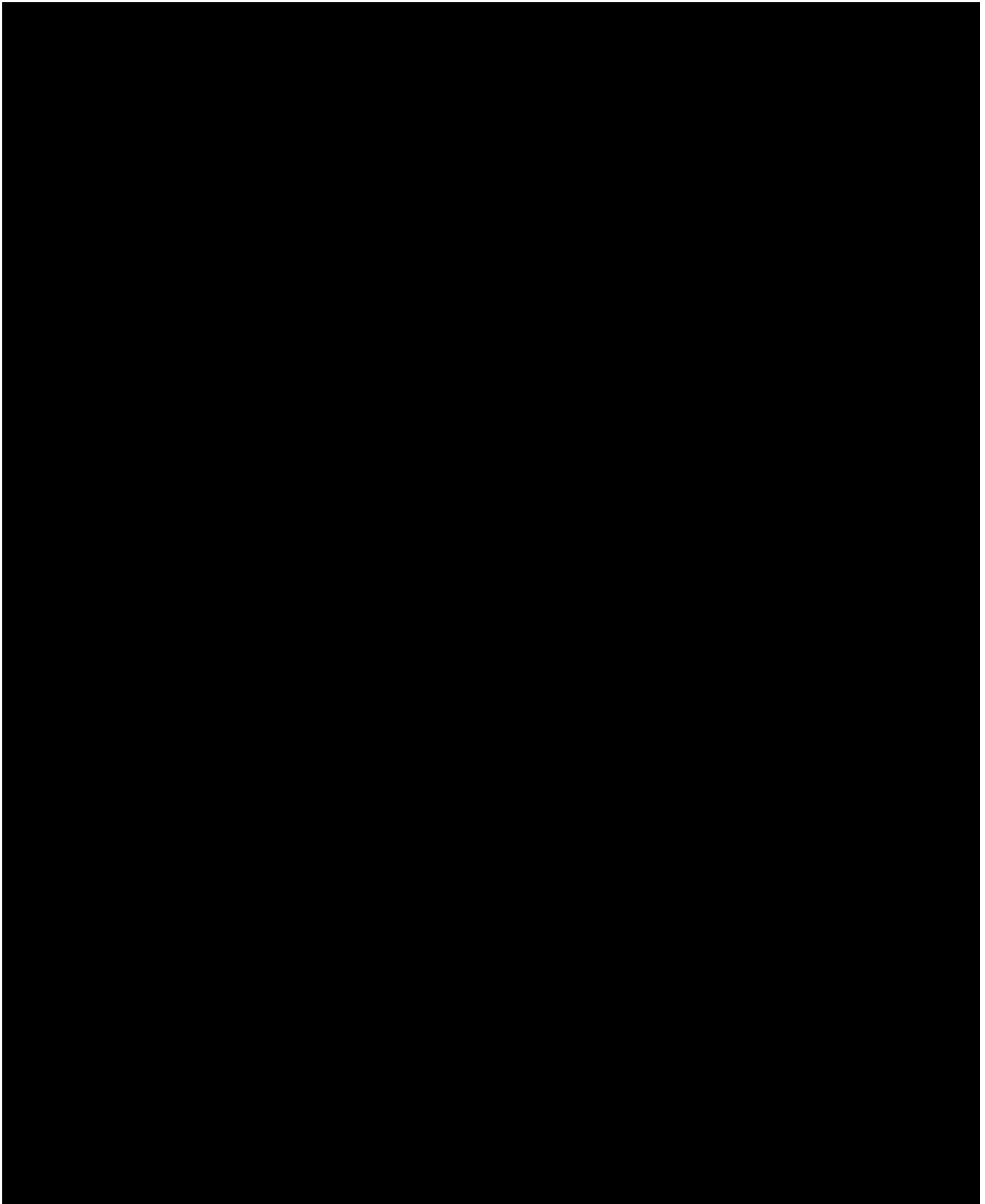


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Match-e-be-nash-she-wish Band of Pottawatomí Indians of Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:47 PM

To Lakota Hobia <lakota.hobia@glt-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>; Section106 <section106@glt-nsn.gov>; Kaila Akina <kaila.akina@glt-nsn.gov>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_Match-E-Be-Nash-She-WishBandPottawatomilIndiansGunLakeTribe_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Lakota Hobia
Tribal Historic Preservation Officer
Match-E-Be-Nash-She-Wish Band of Pottawatomi Indians (Gun Lake Tribe)
2872 Mission Drive
Shelbyville, MI 49344
Via Email: lakota.hobia@glt-nsn.gov

Dear Lakota Hobia,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

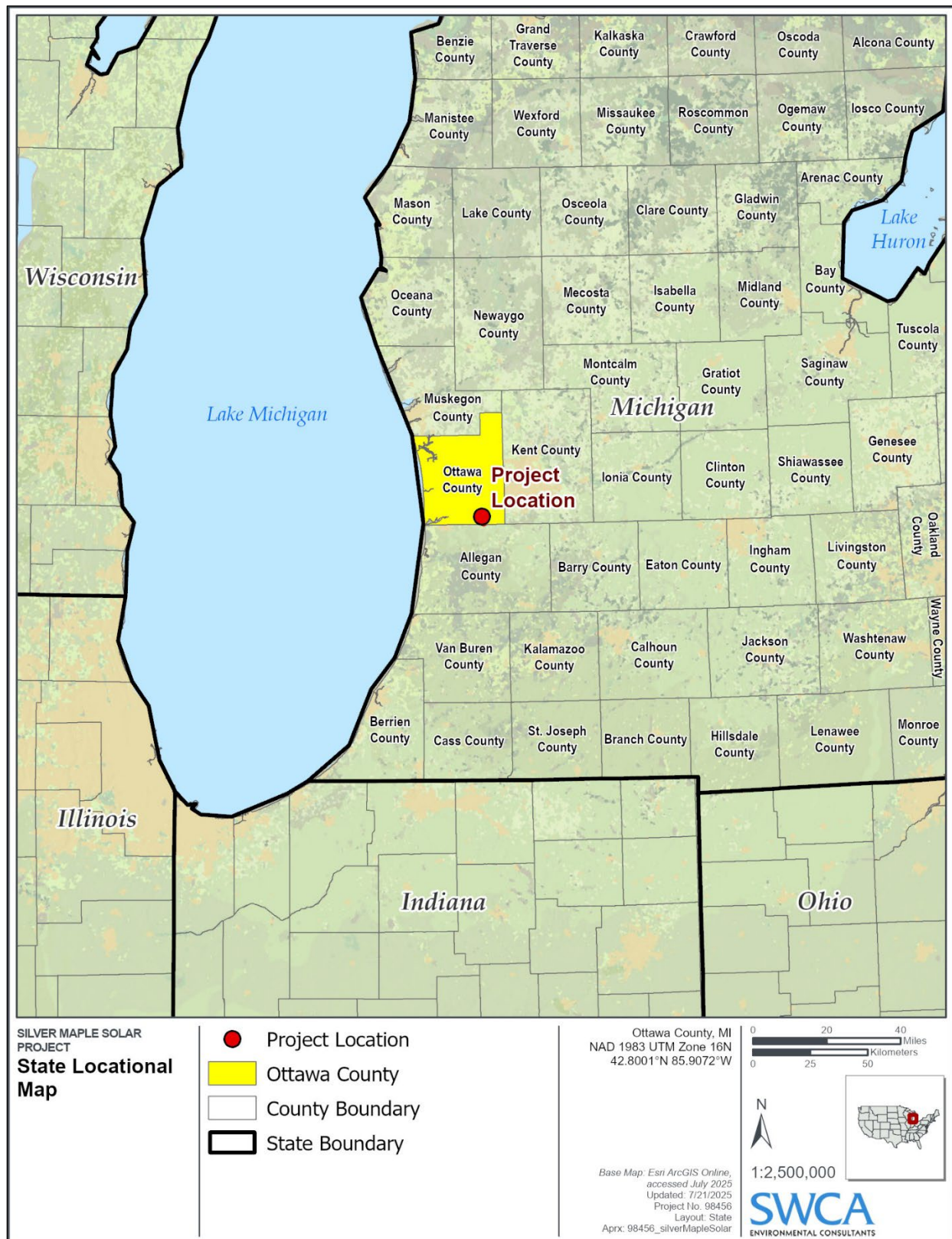


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

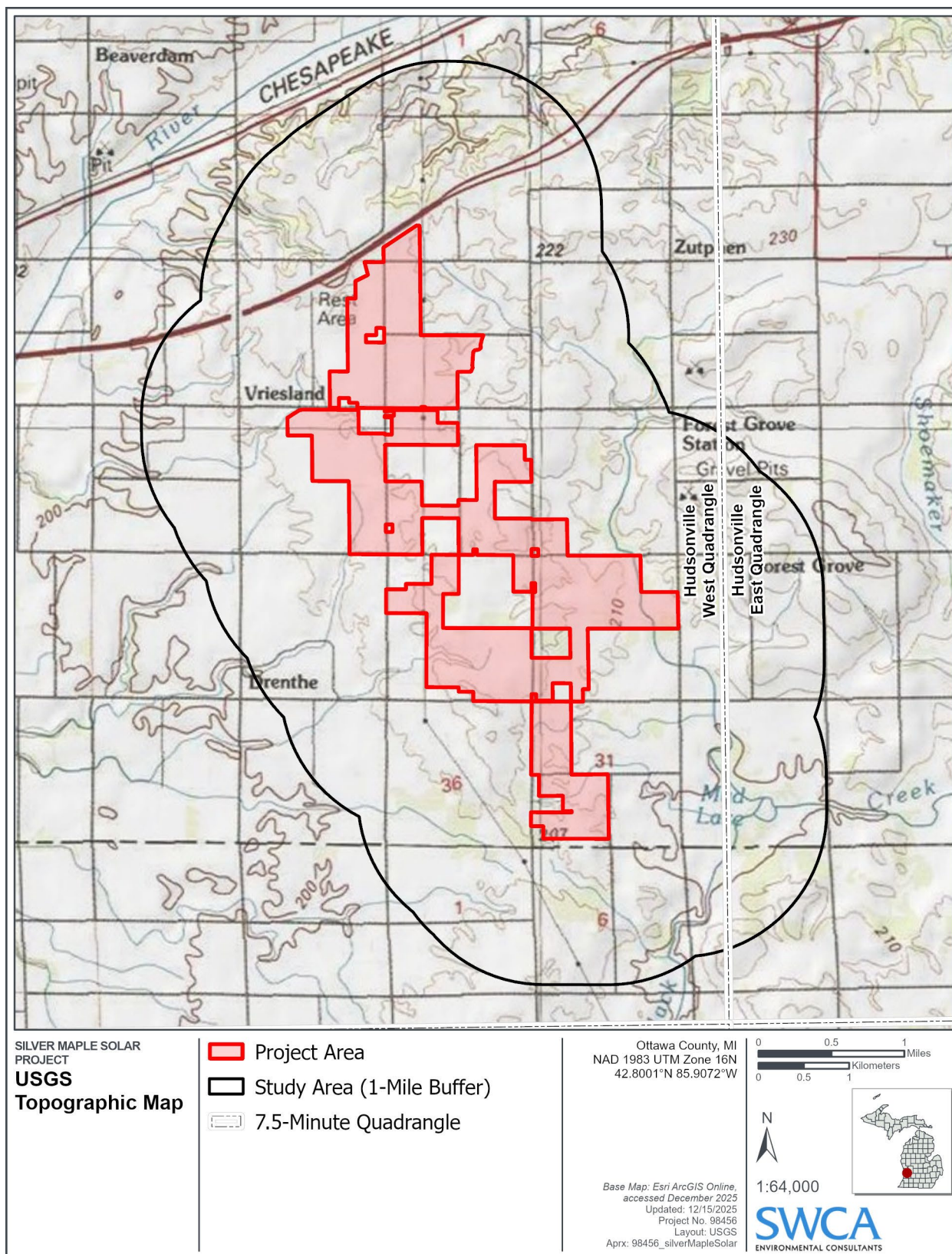


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

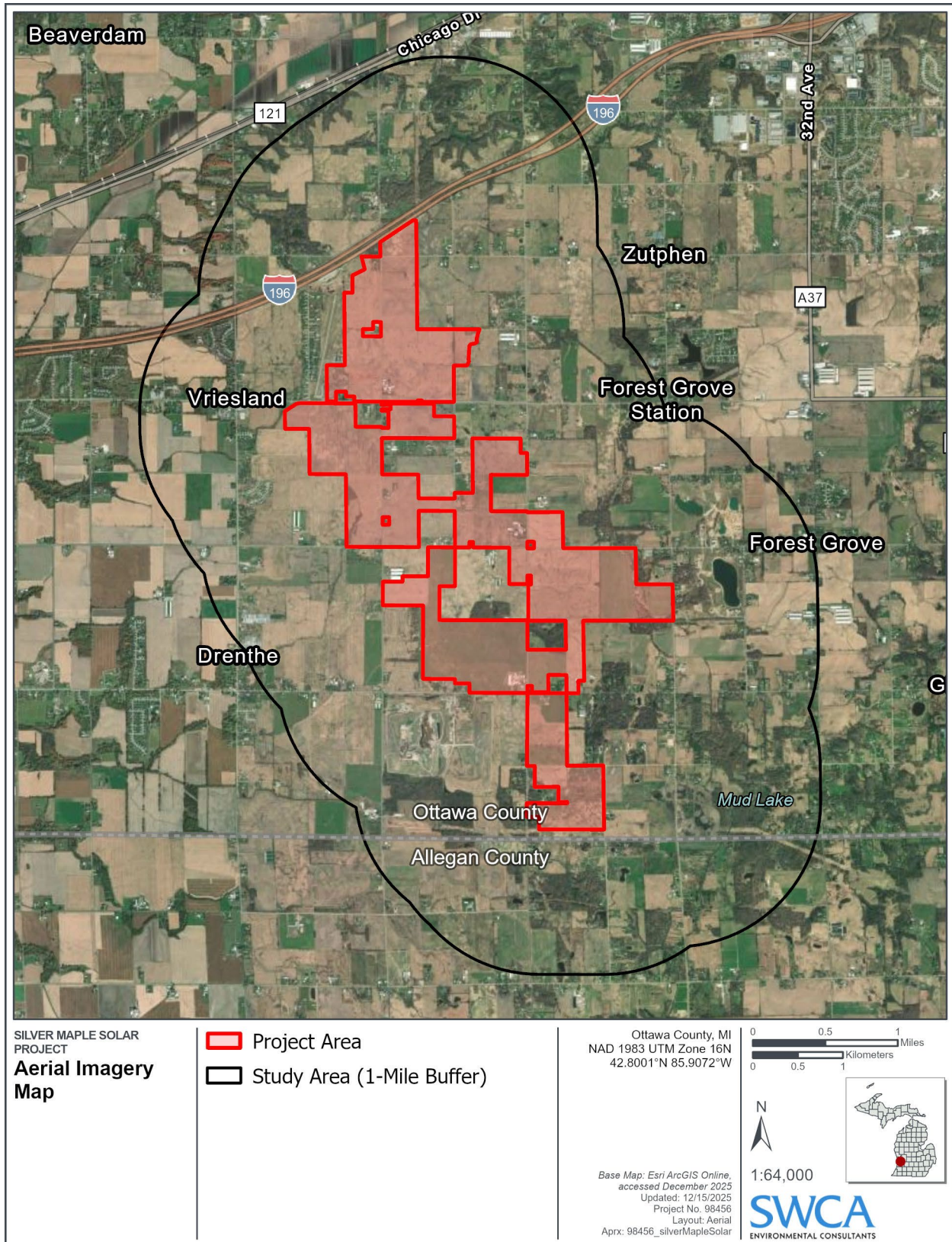


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 247

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

[REDACTED]

2.8.1 Precontact Archaeological Sensitivity

[REDACTED]

[REDACTED]

2.8.2 Potential for Postcontact Archaeological Sites

[REDACTED]

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

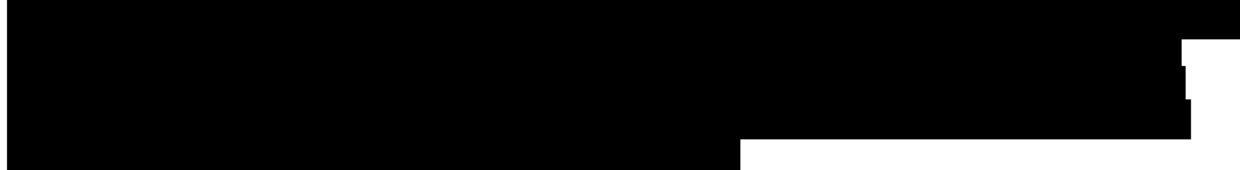
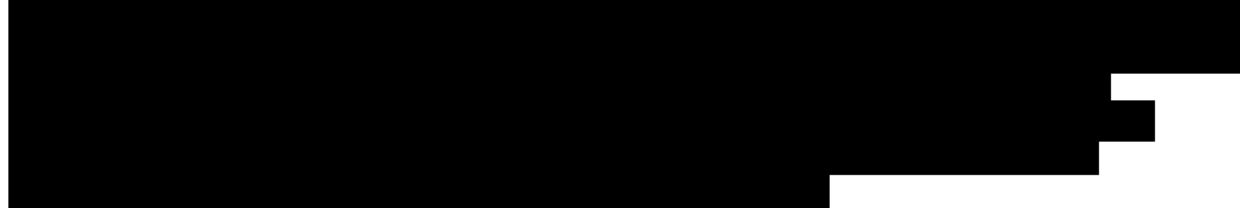
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

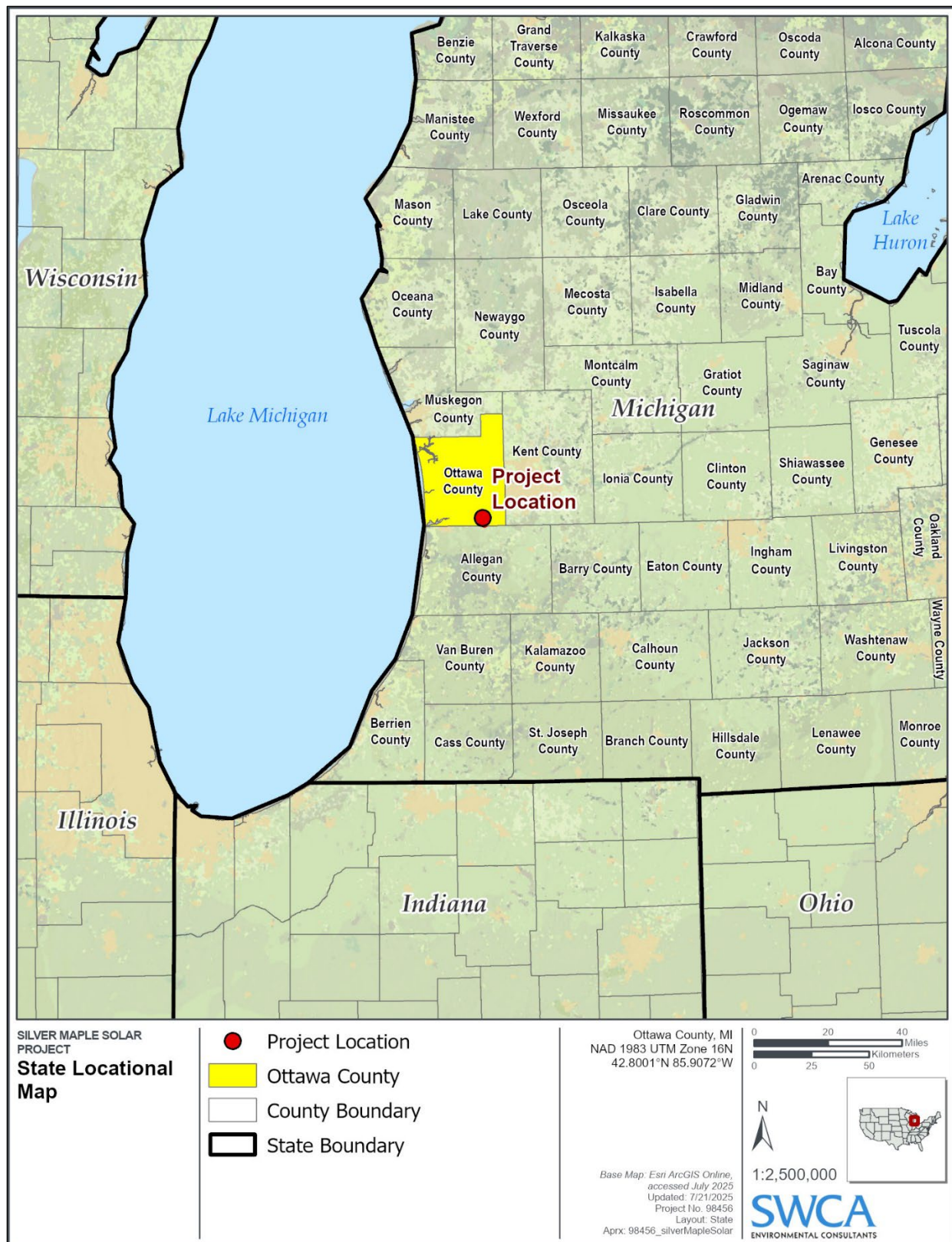


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

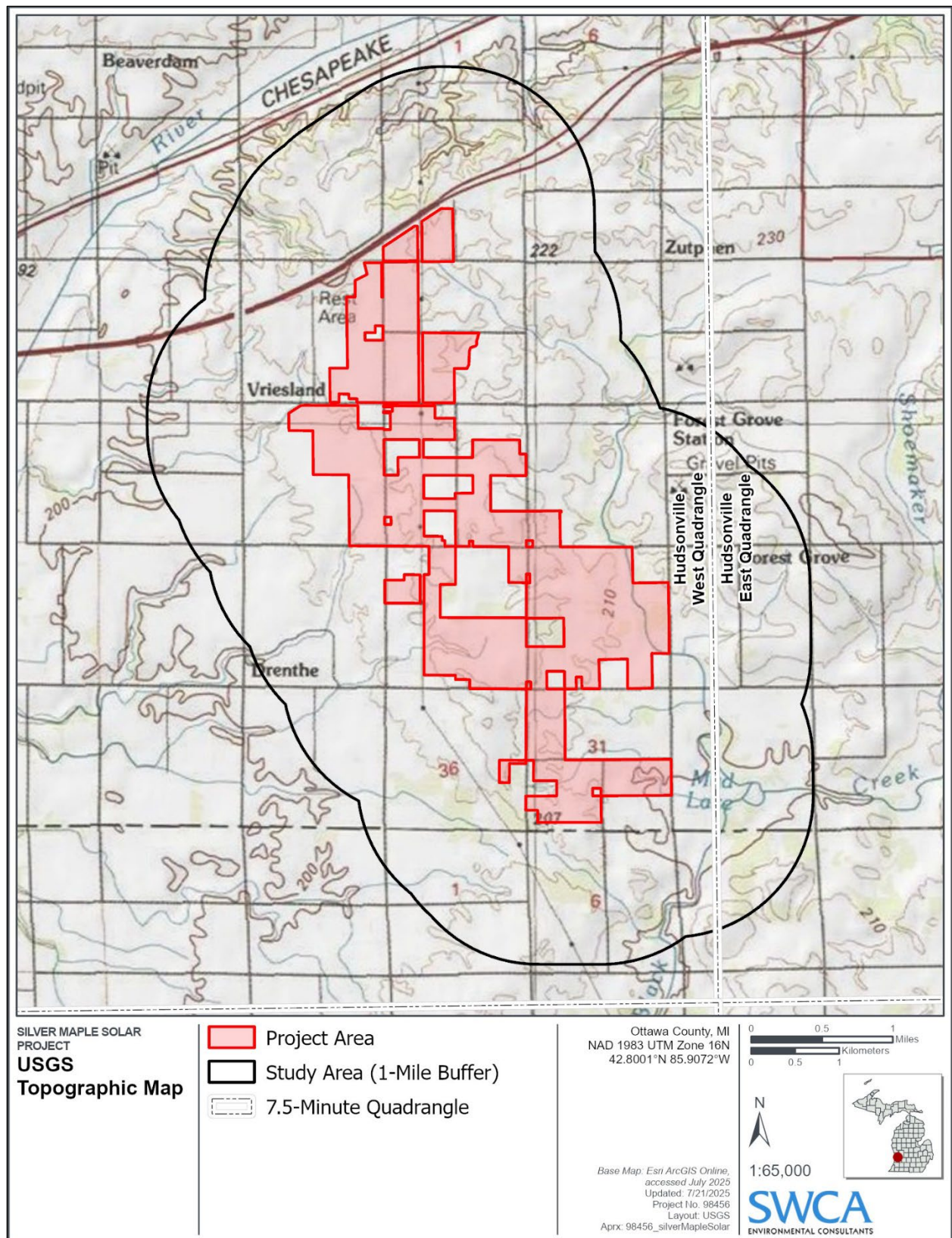


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

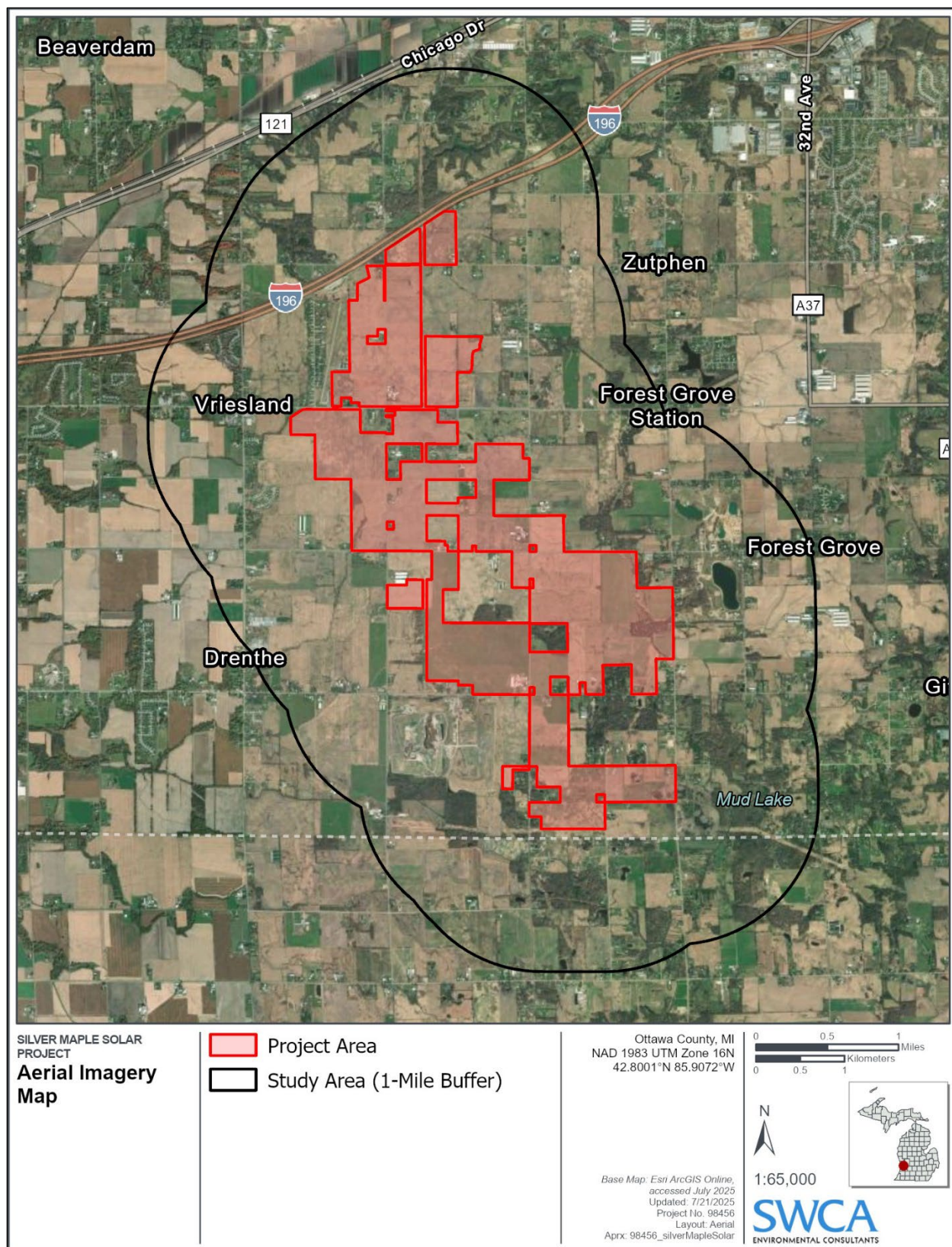


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

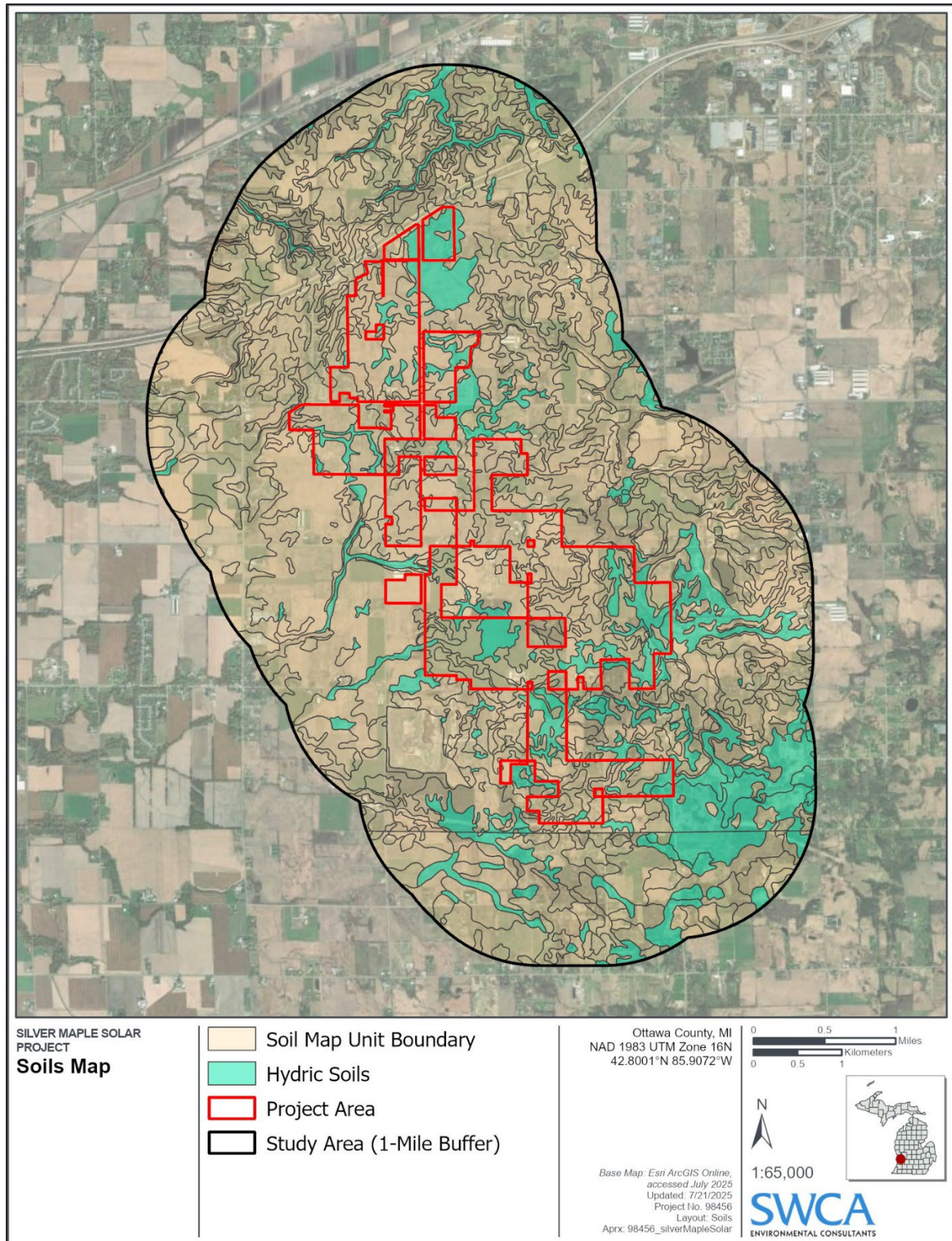


Figure A-4. Soils within the study area.

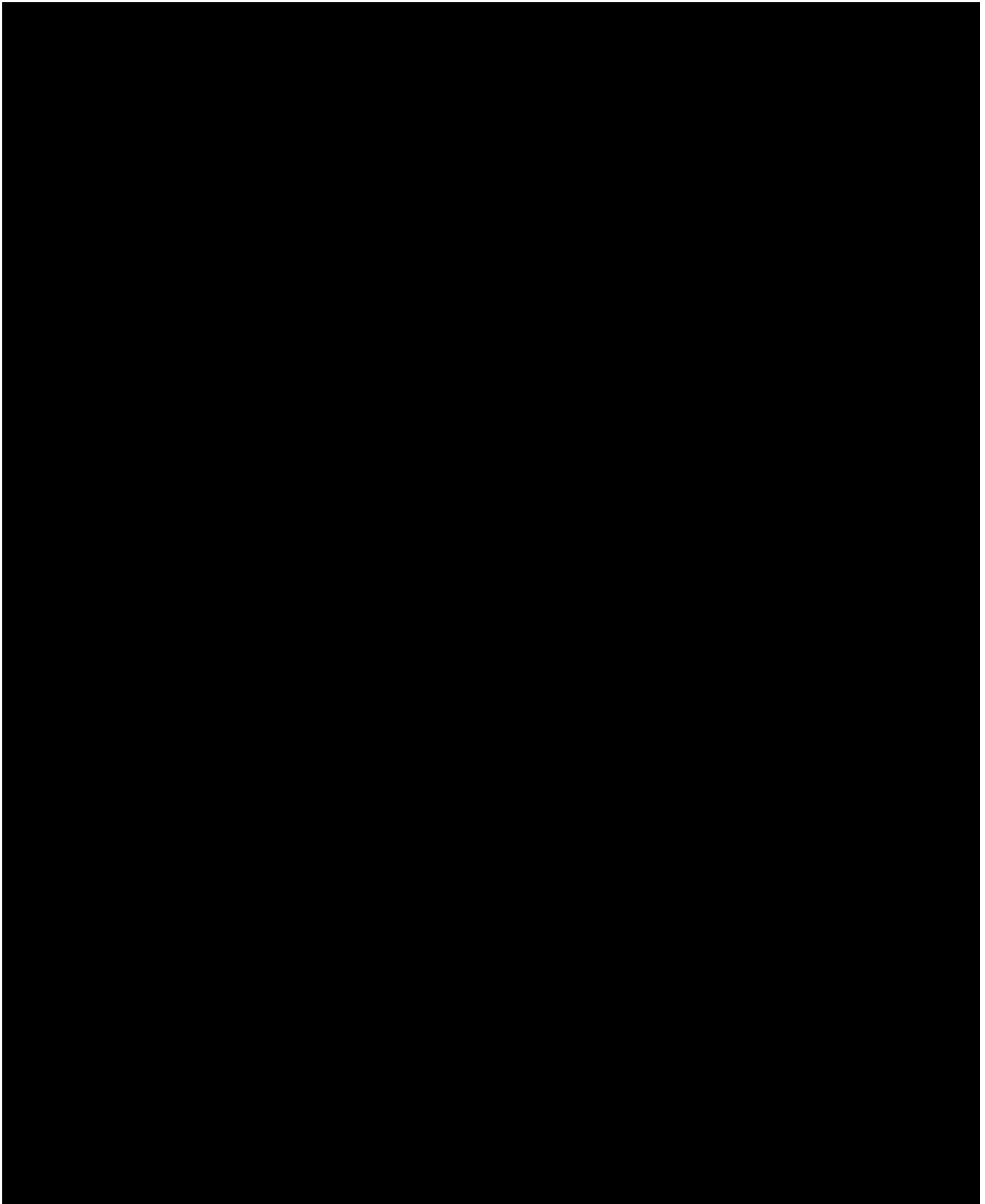


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Nottawaseppi Huron Band of the Potawatomi



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:42 PM

To Onyleen Zapata <onyleen.zapata@nhbp-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_NottawaseppiHuronBandofthePotawatomi_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Onyleen Zapata
Tribal Historic Preservation Officer
Nottawaseppi Huron Band of the Potawatomi
Pine Creek Indian Reservation
1301 T Drive S
Fulton, MI 49052
Via Email: onyleen.zapata@nhbp-nsn.gov

Dear Onyleen Zapata,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar

photovoltaic power generating facility. The leased area/Project area boundary includes approximately 1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

3. Ensure that any cultural resources are addressed in the MPSC permitting process.

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

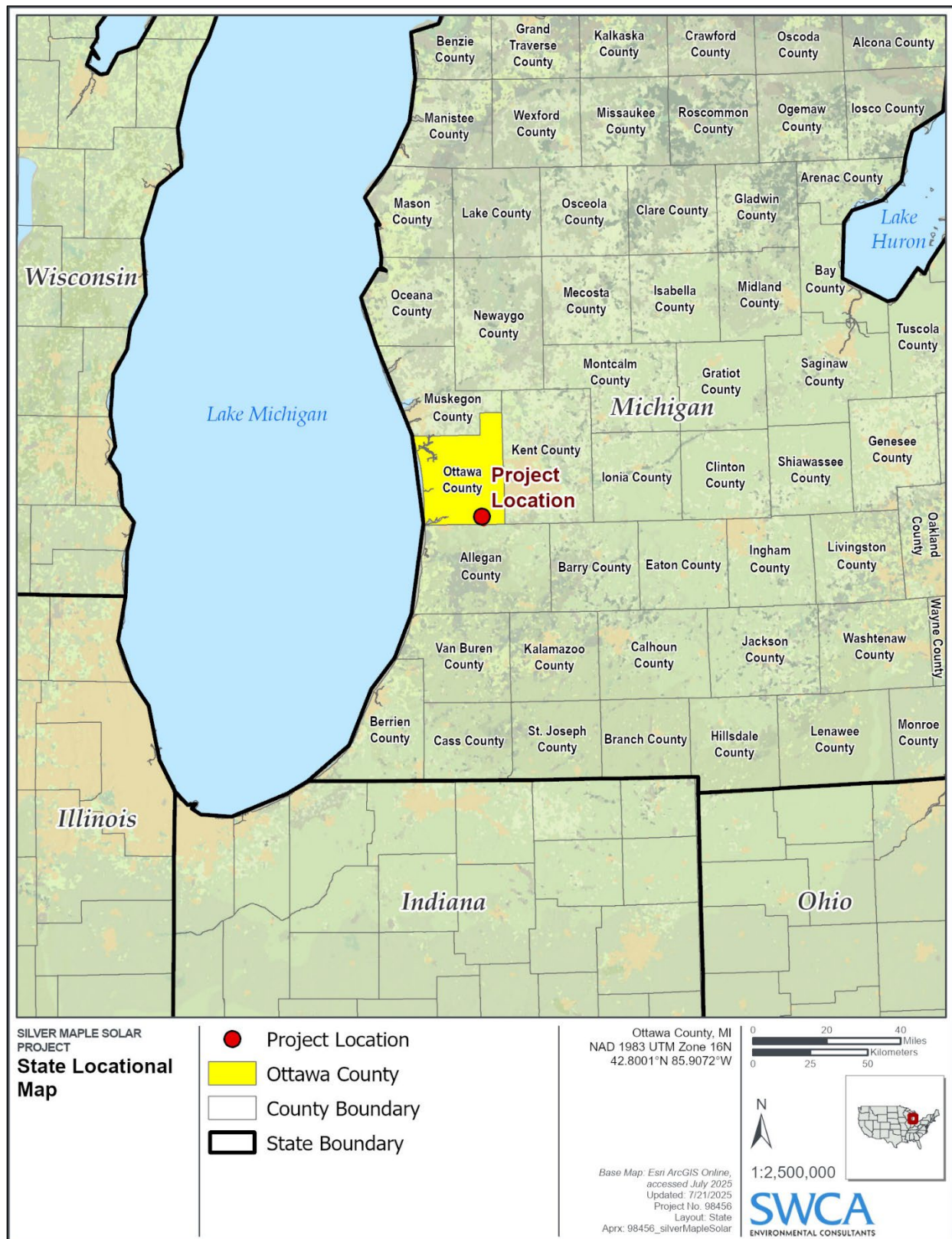


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

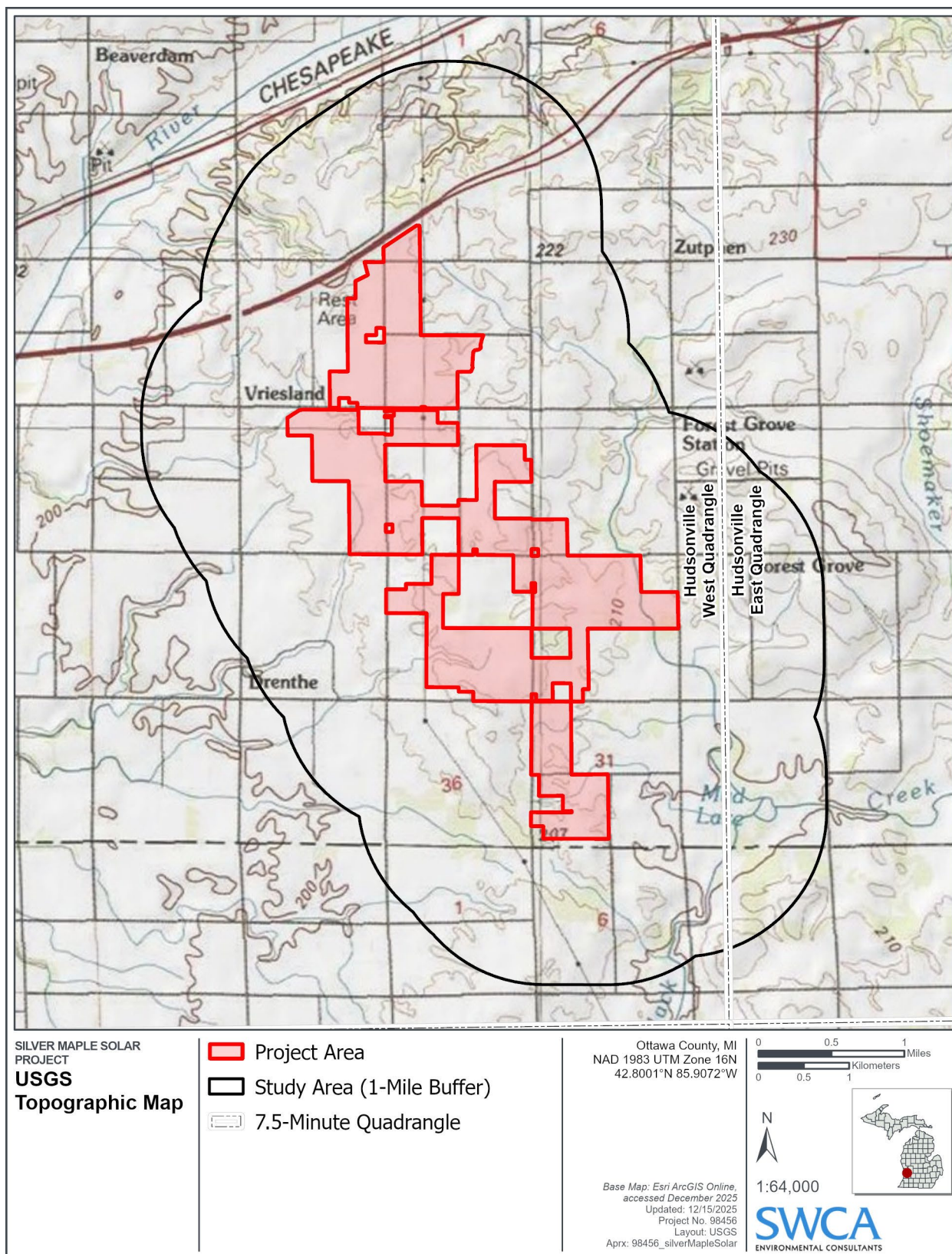


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

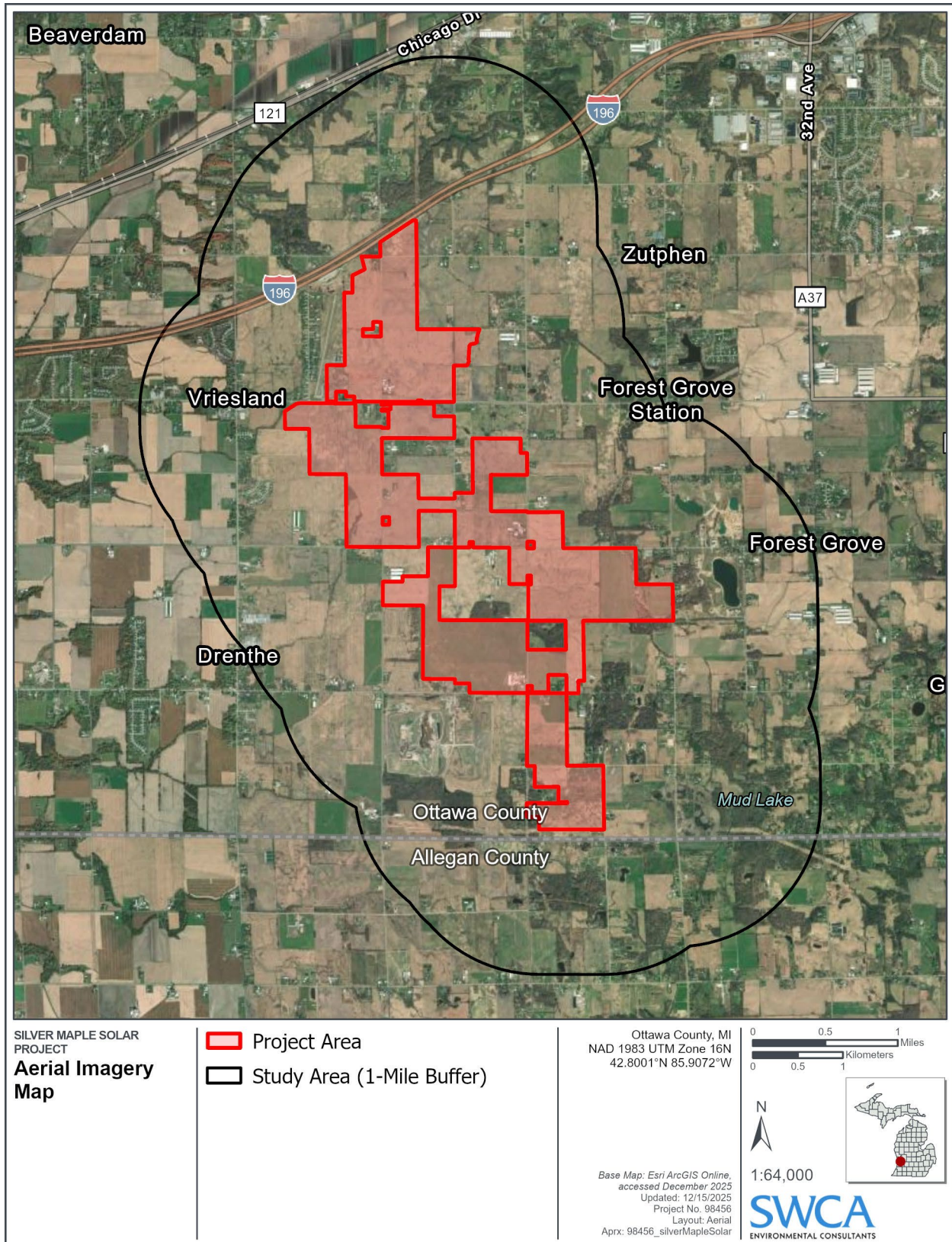


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report

The logo for SWCA is positioned vertically on the left side of the page. It consists of the letters 'S', 'W', 'C', and 'A' stacked vertically in a large, light blue, serif font.

Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

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SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 279

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

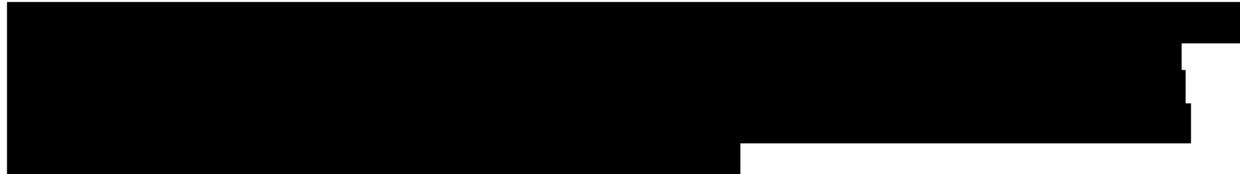
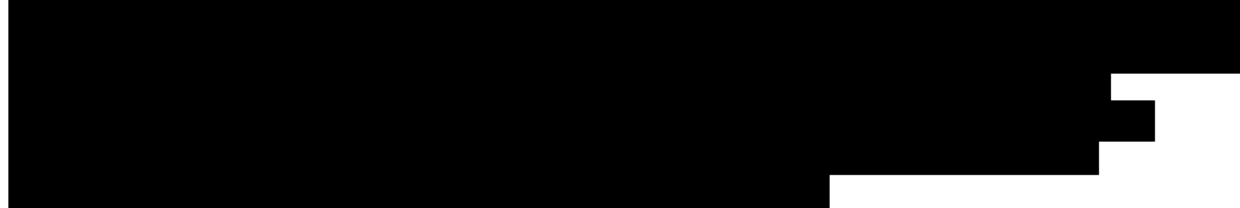
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

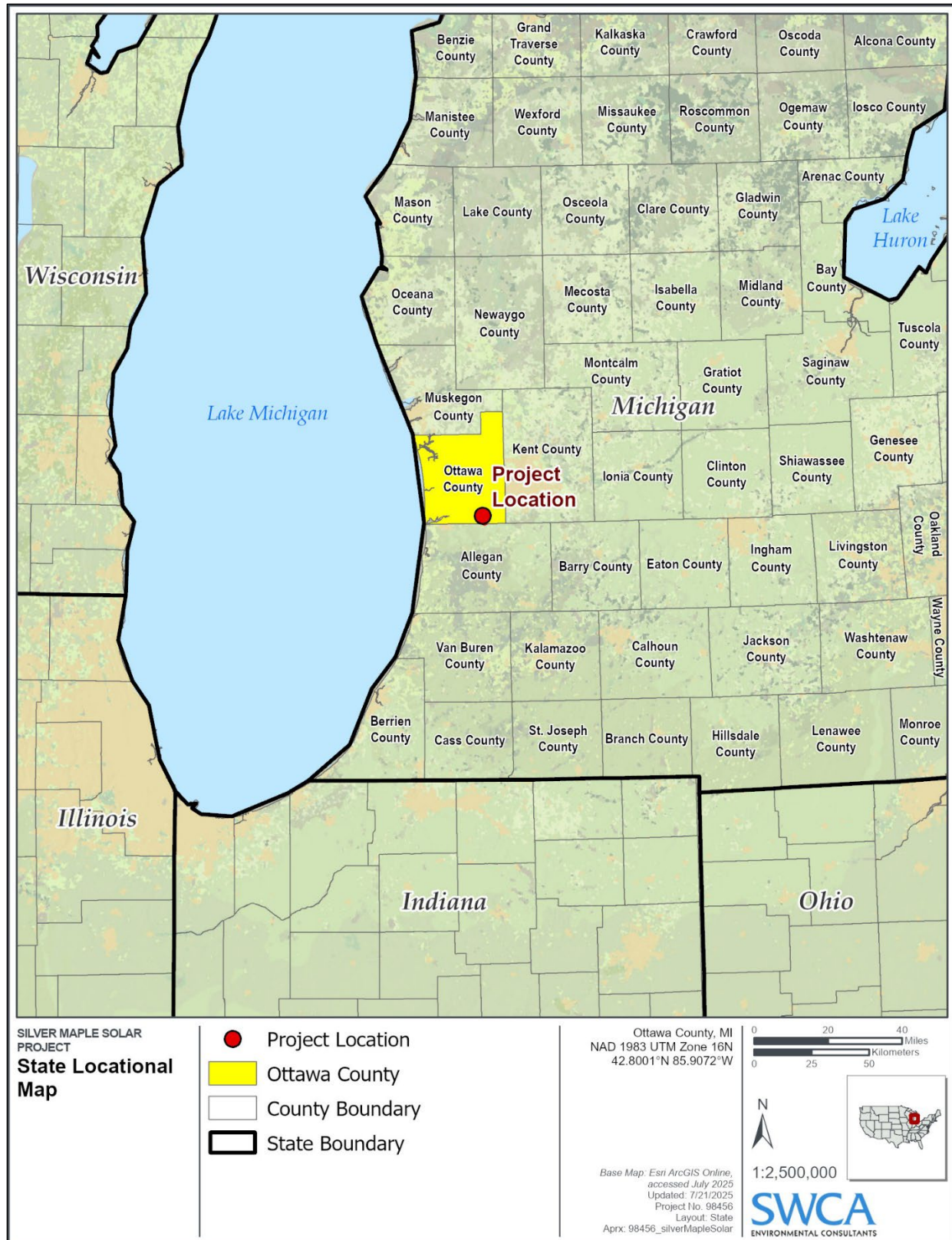


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

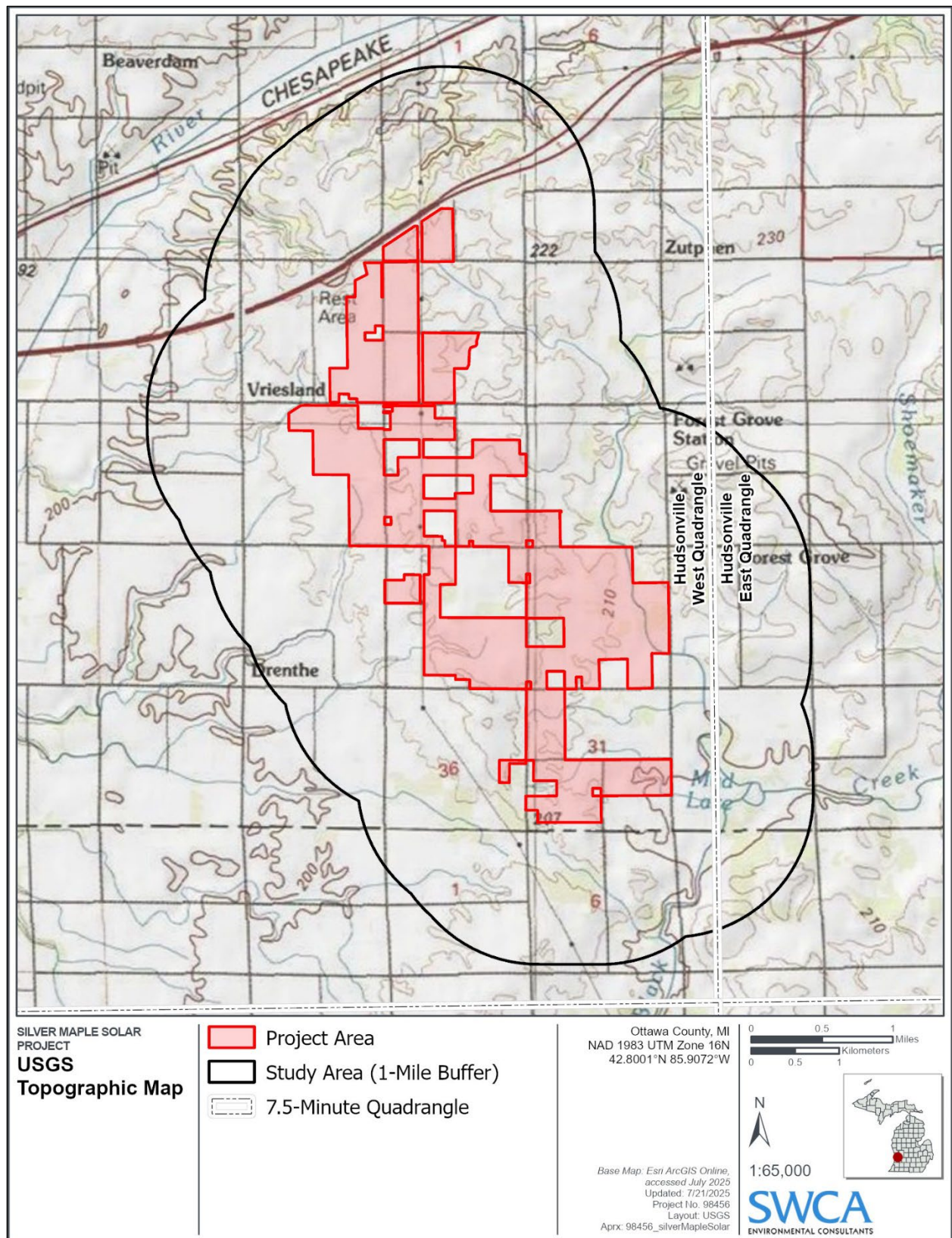


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

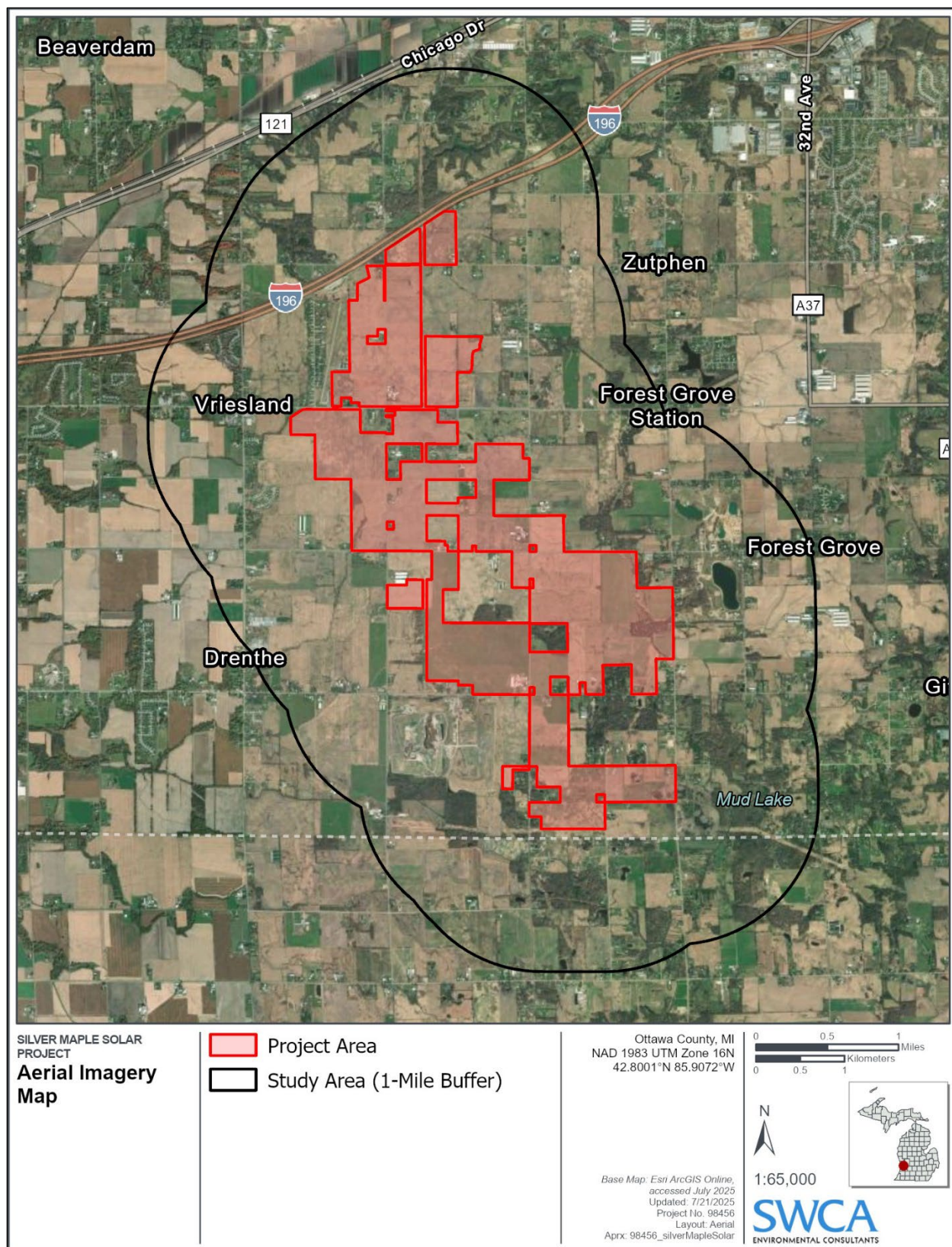


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

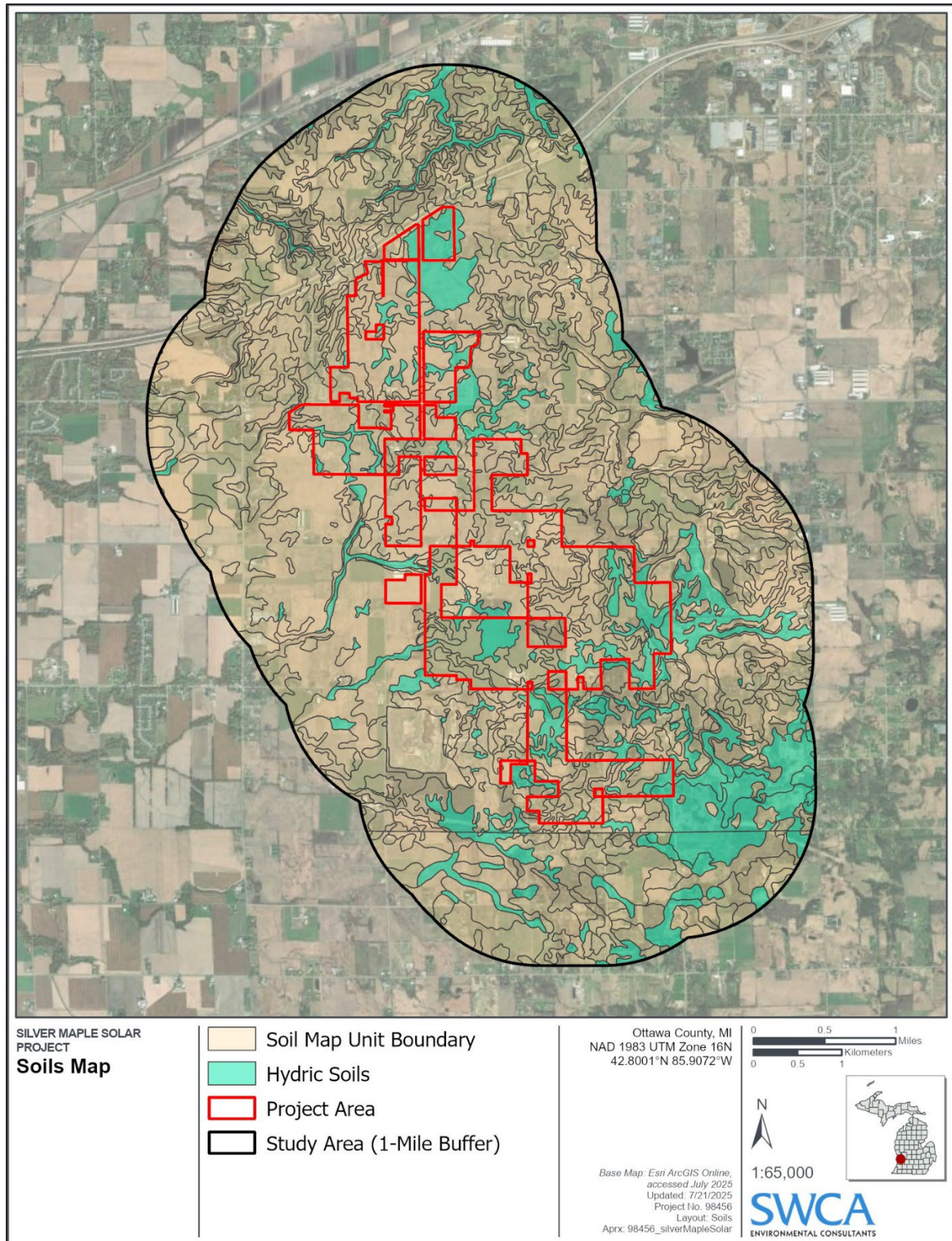


Figure A-4. Soils within the study area.

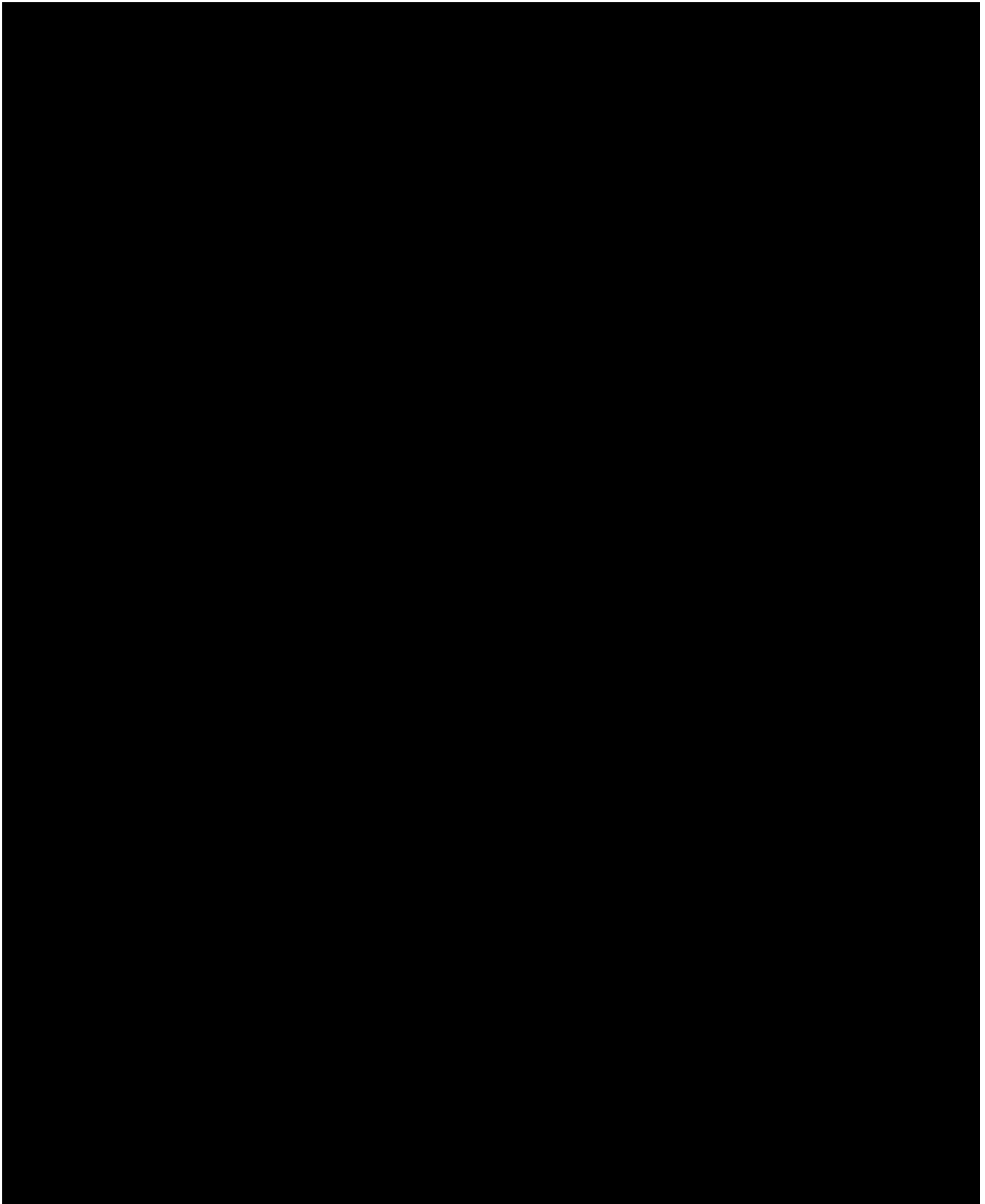


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.



TRIBAL HISTORIC PRESERVATION OFFICE

GATWÉN MAGÉT ÉTHĚ MIKTTHĚEWIT

January 21, 2026

Jonathan R Libbon, RPA
Cultural Resources Director
SWCA Environmental Consultants
80 Emerson Lane, Site 1306,
Bridgeville, Pennsylvania 15017
Telephone: 724-316-5547
Email: JLibbon@swca.com

RE: Silver Maple Consultation

Dear Mr./Mrs./Dr. Jonathan R Libbon,

The Nottawaseppi Huron Band of Potawatomi (NHBP) Tribal Historic Preservation Office has received the Section 106 consultation request for comments regarding a proposed 200 mega watt solar facility in the Townships of Zeeland and Jamestown, Ottawa County, Michigan. At this time, we won't be providing any further comments. We have not identified any information concerning the presence of any historic properties/cultural resources significant to the Nottawaseppi Huron Band of the Potawatomi within the Area of Potential Effect (APE). This is not to say that such a site may not exist, just that this office does not have any available information for the area(s) at this point in time.

This Office will be available to assist you in the future or during the course of this project if there is an unanticipated encounter with human remains, funerary objects, and artifacts. The subsequent identification of additional historic properties/cultural resources affected by the undertaking will require reinitiating Section 106 consultation related to all ongoing and proposed project work and the handling of "discoveries" per the Nation Historic Preservation Act (NHPA) implementing regulations, 36 CFR Part 800, and, as applicable, the Native American Graves Protection and Repatriation Act (NAGPRA) and its implementing regulations, 43 CFR Part 10. In the event of an encounter with unanticipated human remains, funerary objects, and artifacts we request to be notified within **72 hours**. The Tribe will then determine if further consultation is necessary.

Please contact Kennedy Swan with any further questions or requests at 269.704.7036 or kennedy.swan@nhbp-nsn.gov. We thank you for including the Nottawaseppi Huron Band of the Potawatomi in your consultation efforts and planning processes.

Migweth Thank you,
Onyleen Zapata
Tribal Historic Preservation Officer and NAGPRA Representative

Pokagon Band of Potawatomi Indians



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:42 PM

To Matthew Bussler <matthew.bussler@pokagonband-nsn.gov>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_PokagonBandofPotawatomiIndians_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Matthew J.N. Bussler
Tribal Historic Preservation Officer
Pokagon Band of Potawatomi Indians
Department of Language and Culture
59291 Indian Lake Road/P.O. Box 180
Dowagiac, MI 49047
Via Email: matthew.bussler@pokagonband-nsn.gov

Dear Matthew Bussler,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar

photovoltaic power generating facility. The leased area/Project area boundary includes approximately 1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

3. Ensure that any cultural resources are addressed in the MPSC permitting process.

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

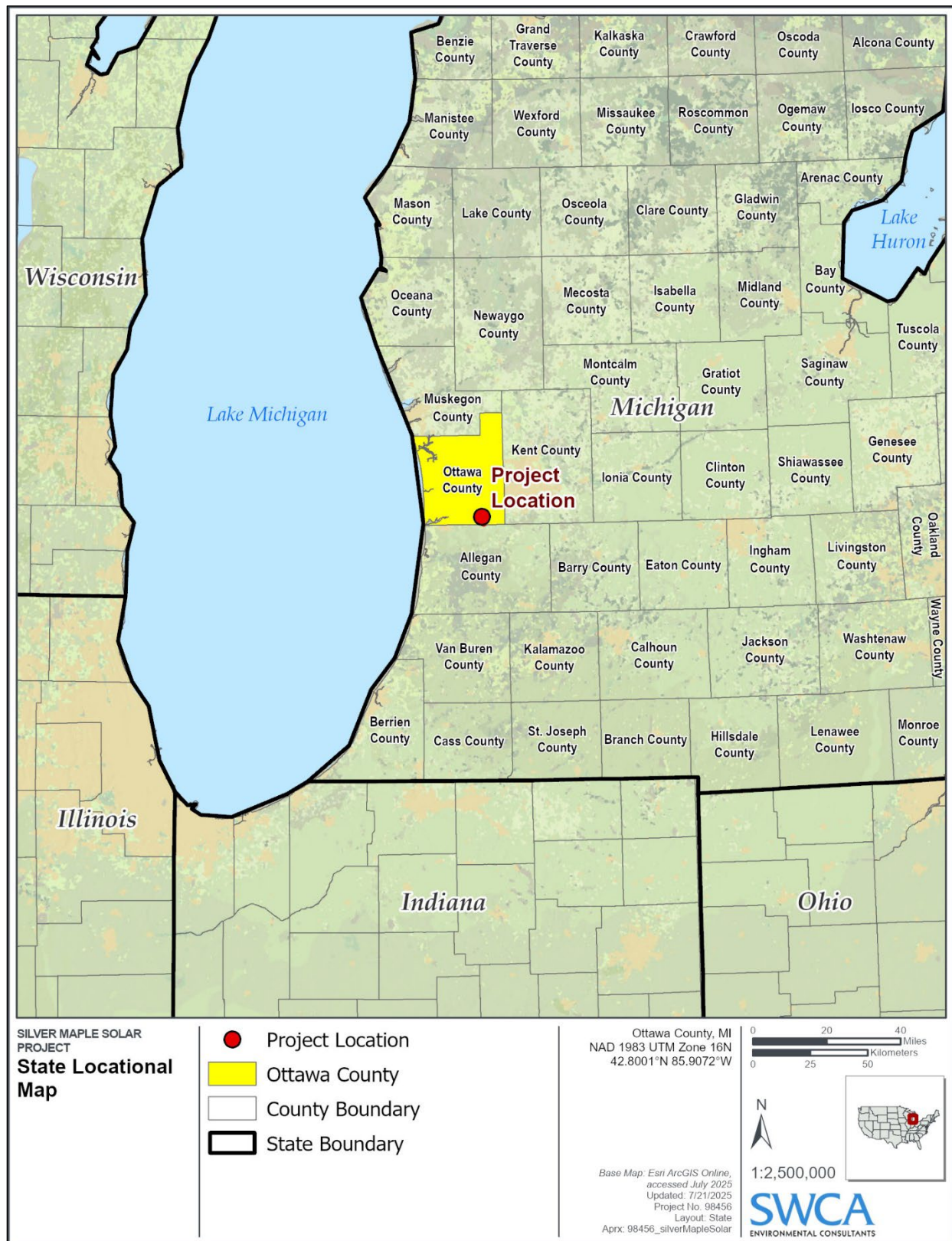


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

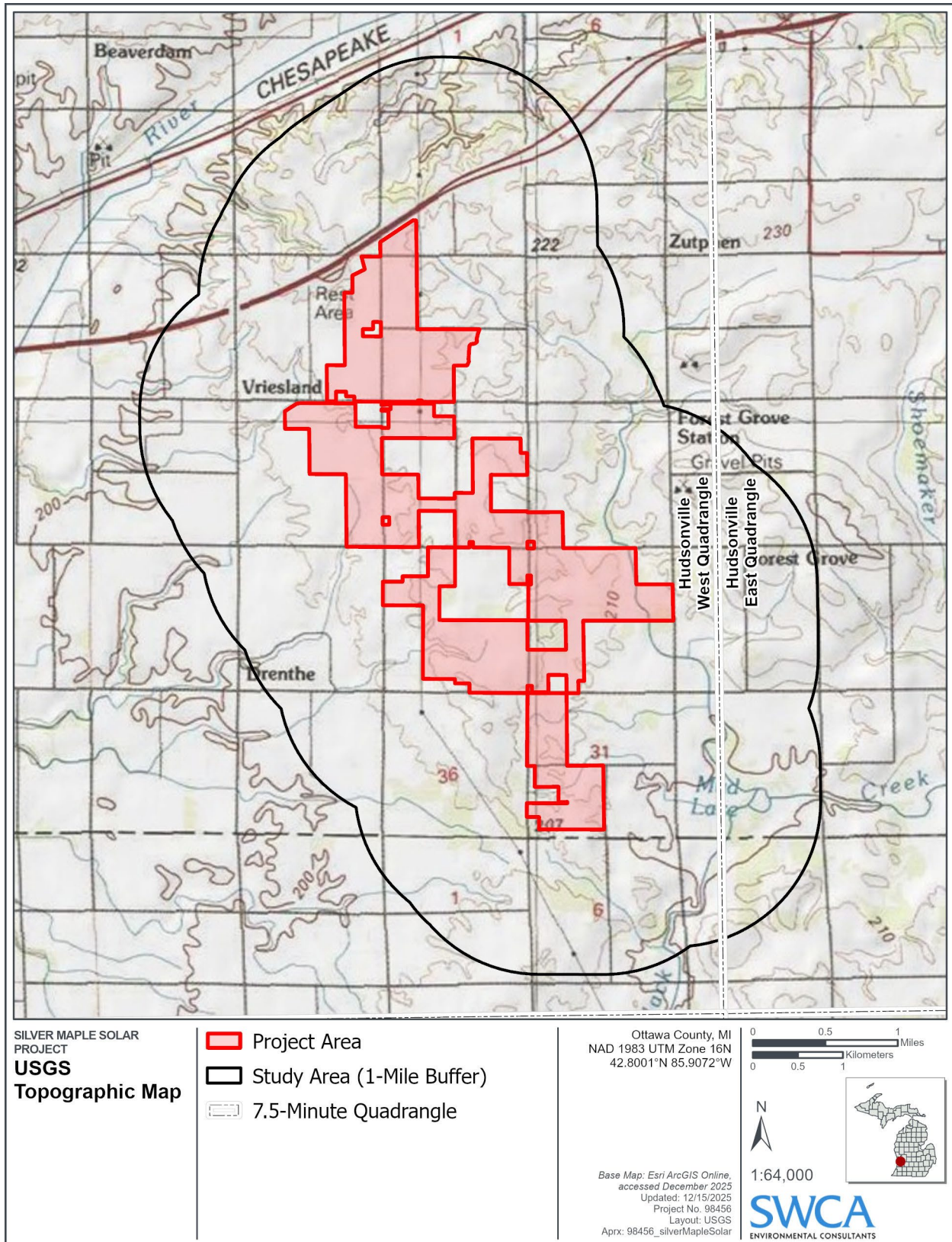


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

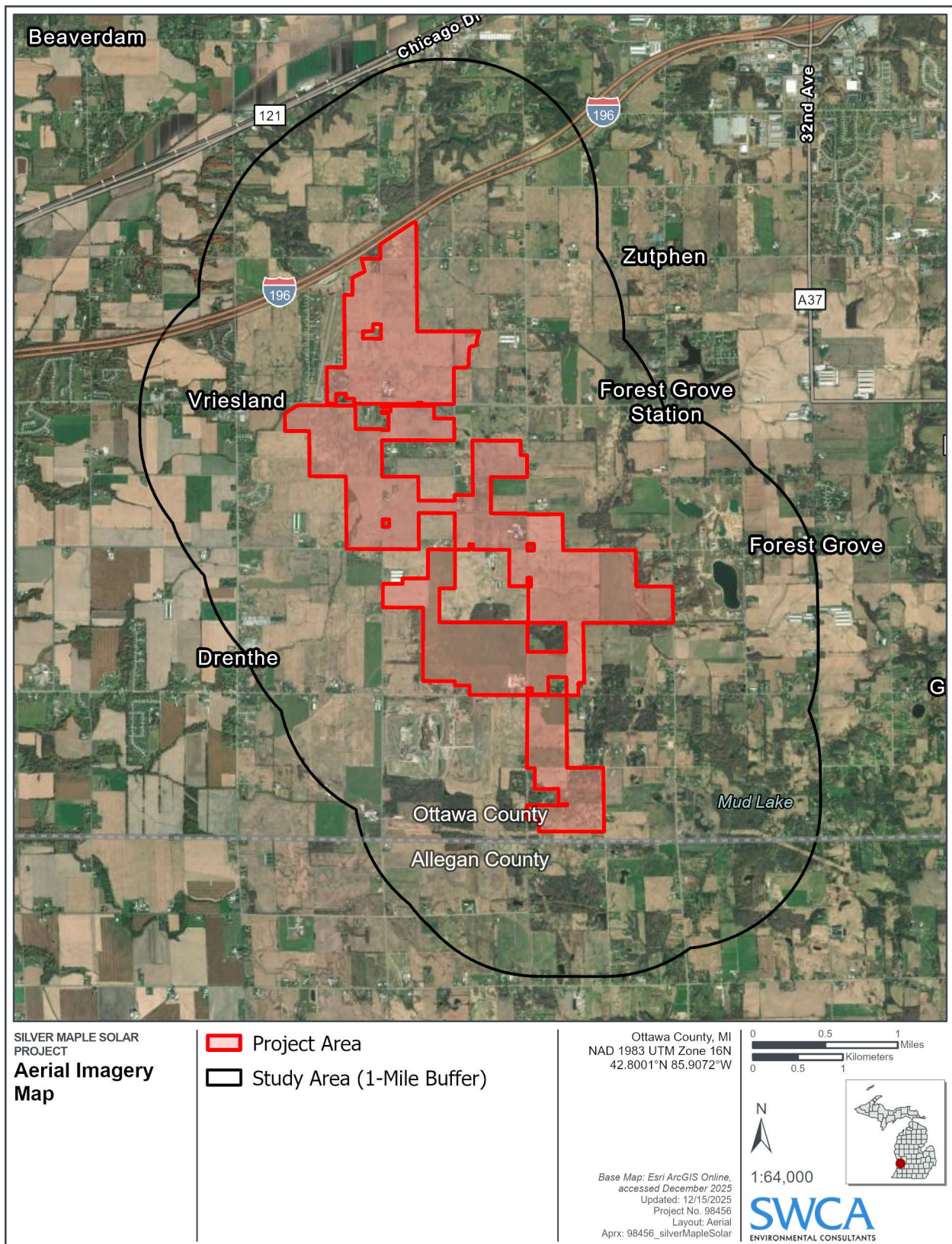


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Prepared by

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 312

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

2.8.1 Precontact Archaeological Sensitivity

2.8.2 Potential for Postcontact Archaeological Sites

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

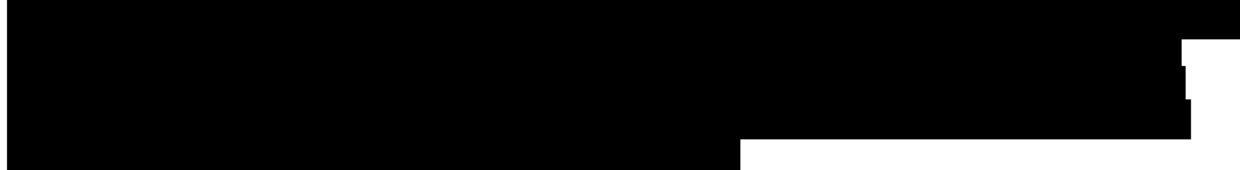
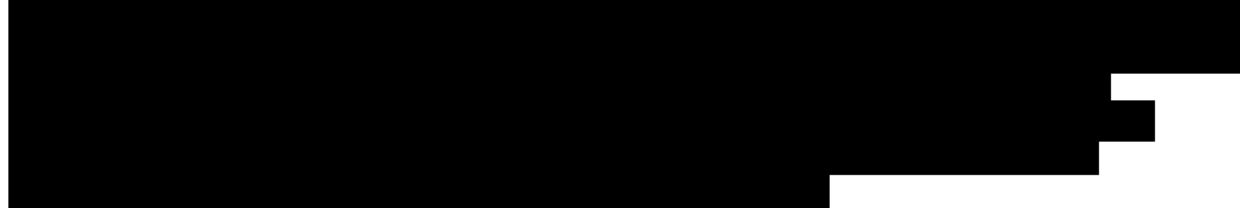
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

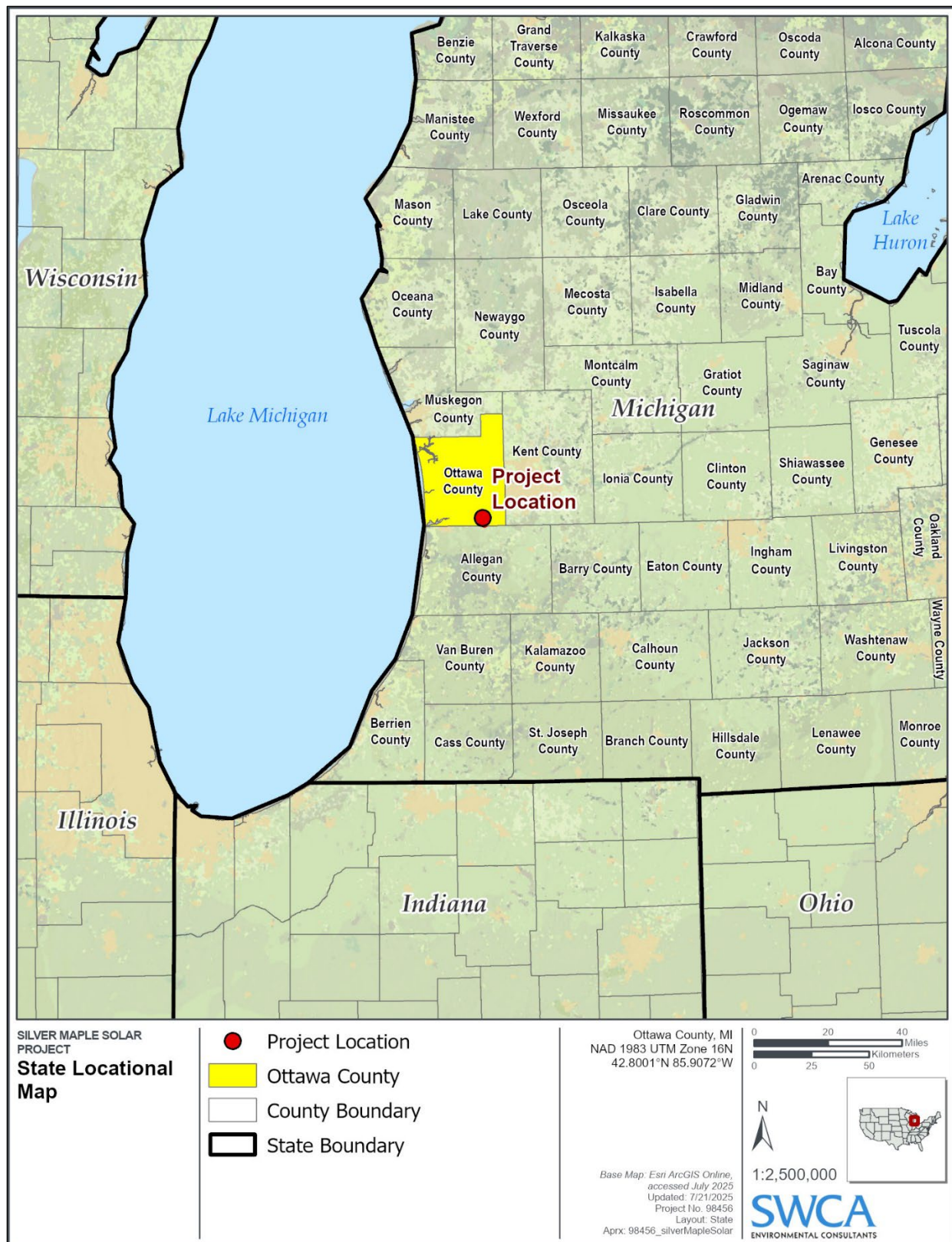


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

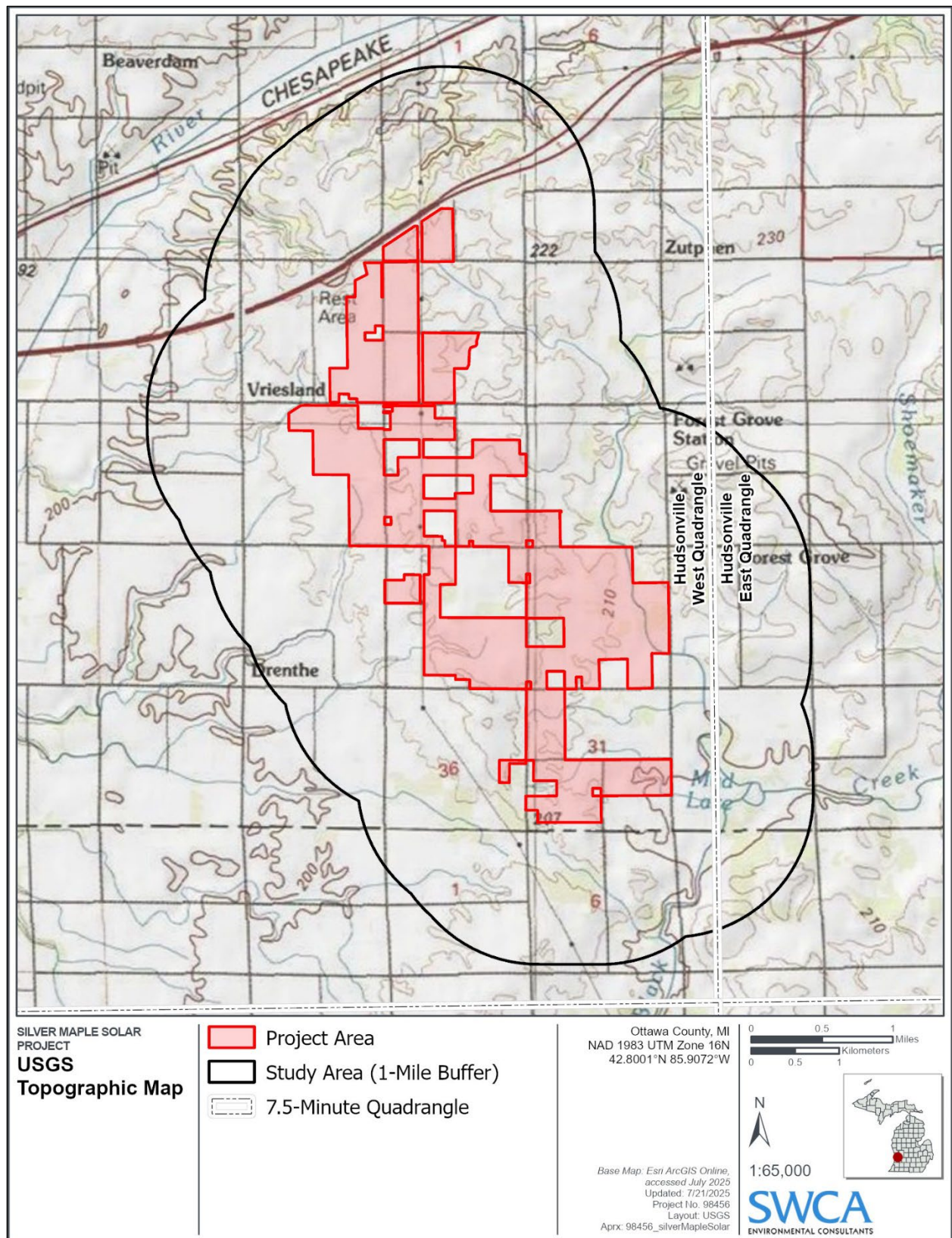


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

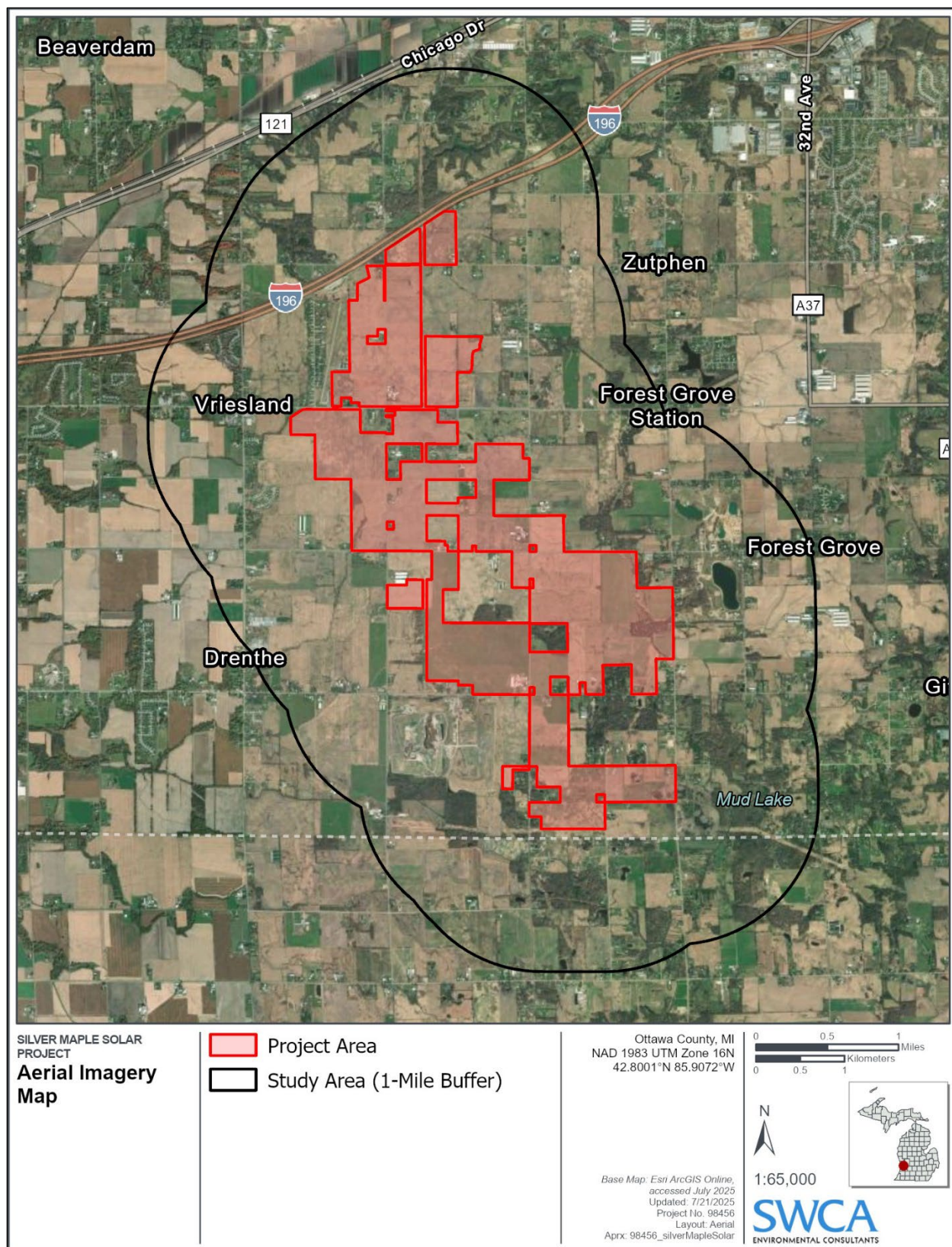


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

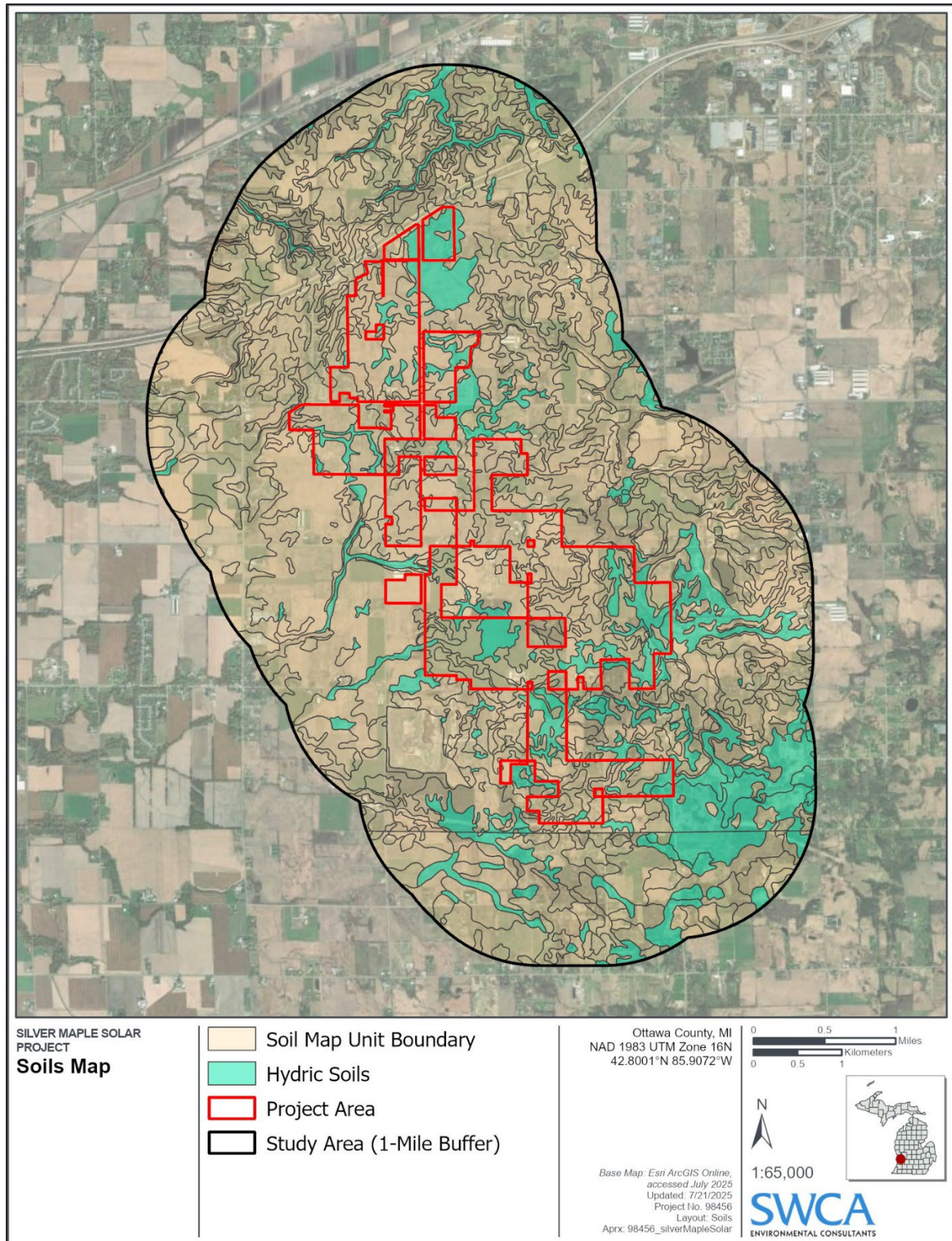


Figure A-4. Soils within the study area.

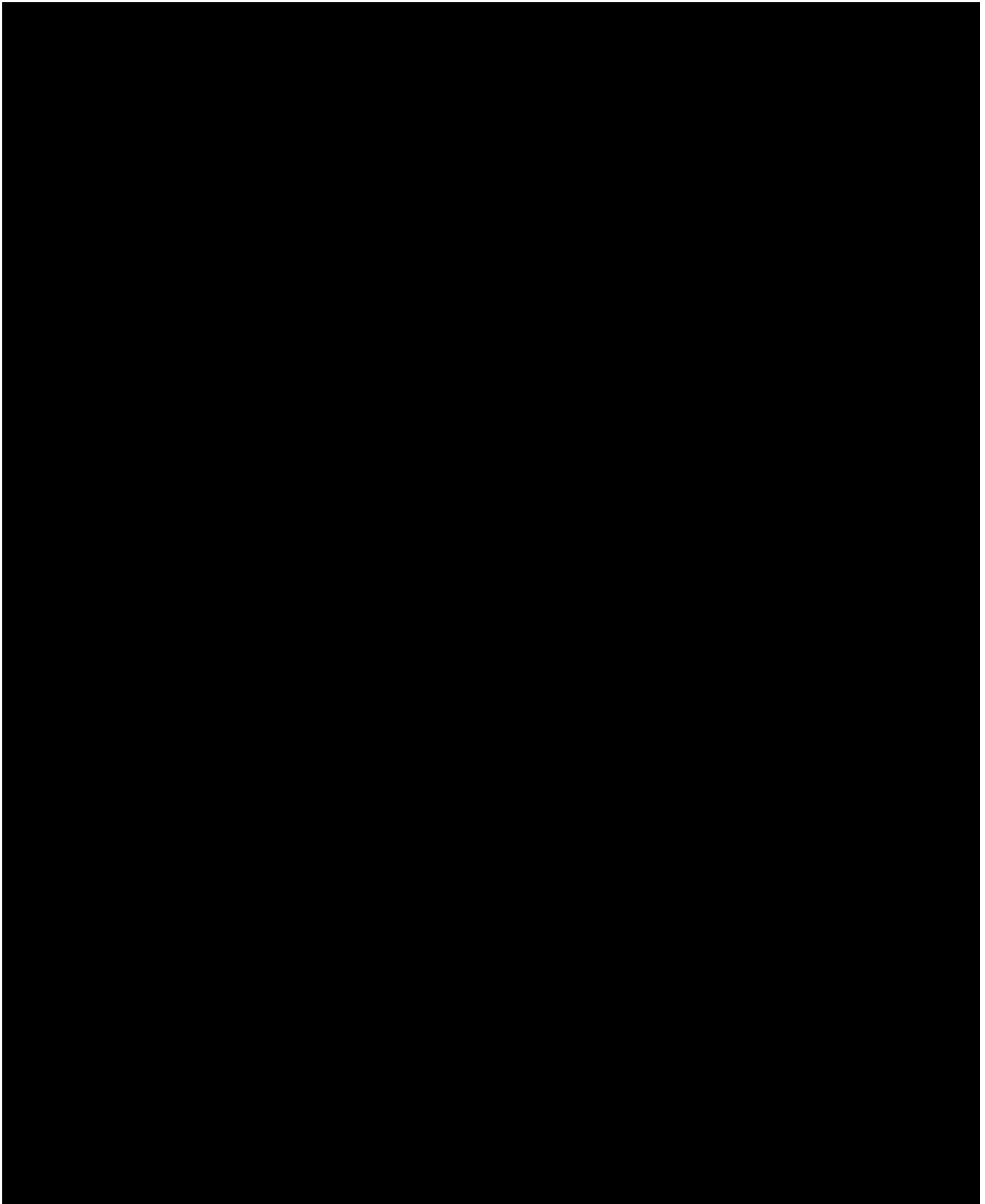


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Saginaw Chippewa Indian Tribe of Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:42 PM

To Marcella Hadden <mlhadden@sagchip.org>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_SaginawChippewaIndianTribeMI_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Marcella Hadden
Tribal Historic Preservation Officer
Saginaw Chippewa Indian Tribe of Michigan
Ziibiwing Center of Anishinabe Culture & Lifeways
6650 East Broadway
Mt. Pleasant, MI 48858
Via Email: mlhadden@sagchip.org

Dear Marcella Hadden,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar

photovoltaic power generating facility. The leased area/Project area boundary includes approximately 1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67f46e46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

3. Ensure that any cultural resources are addressed in the MPSC permitting process.

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

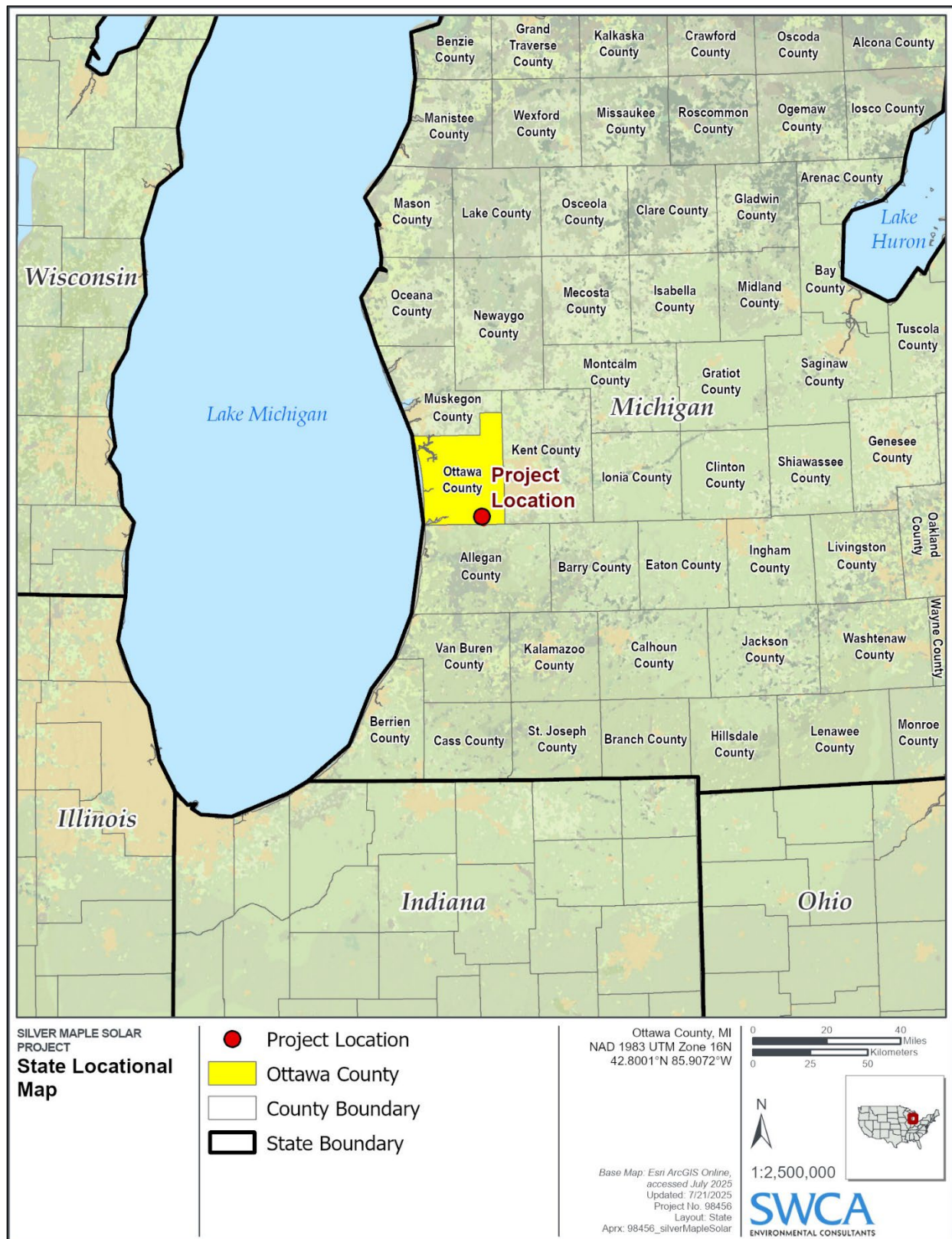


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

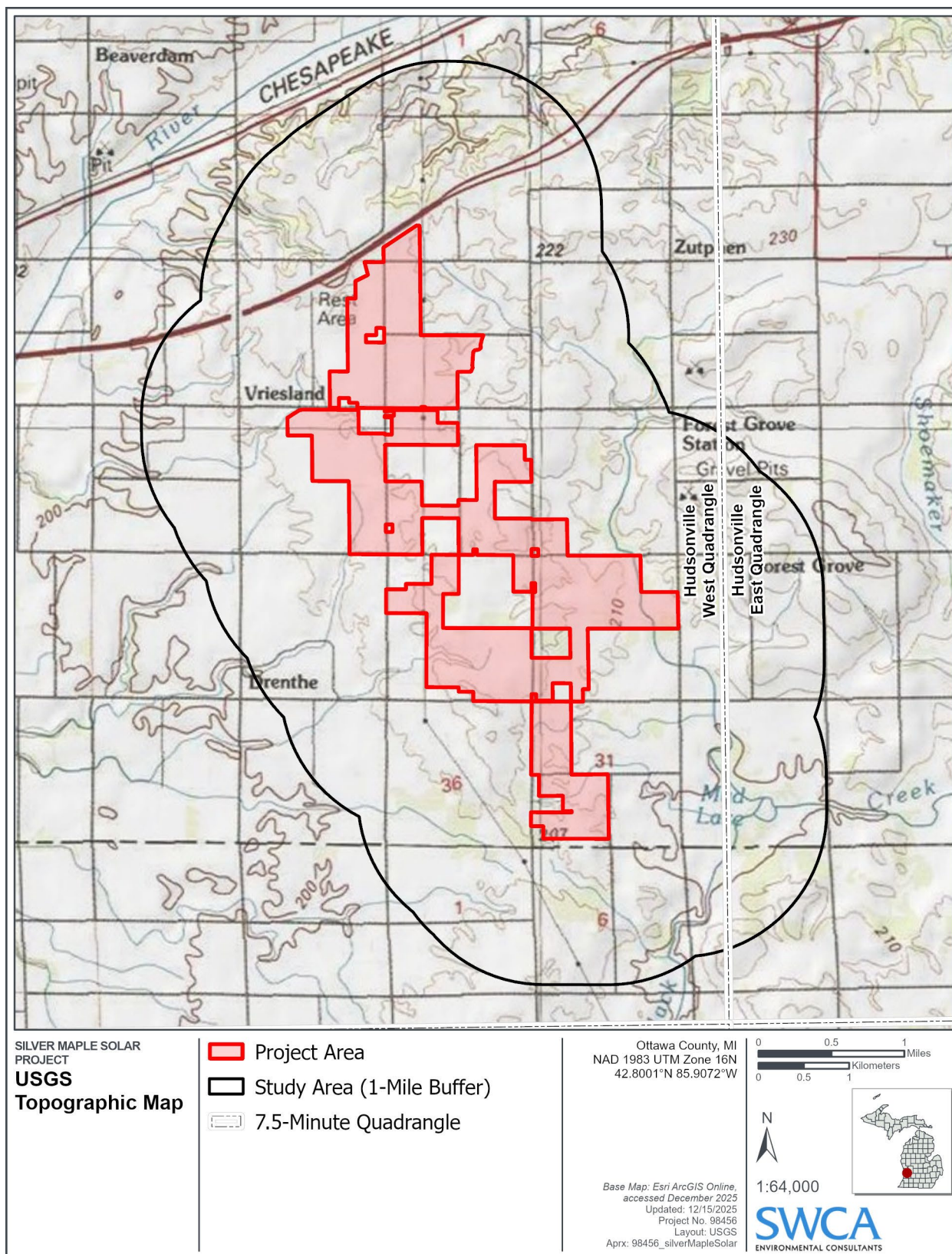


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

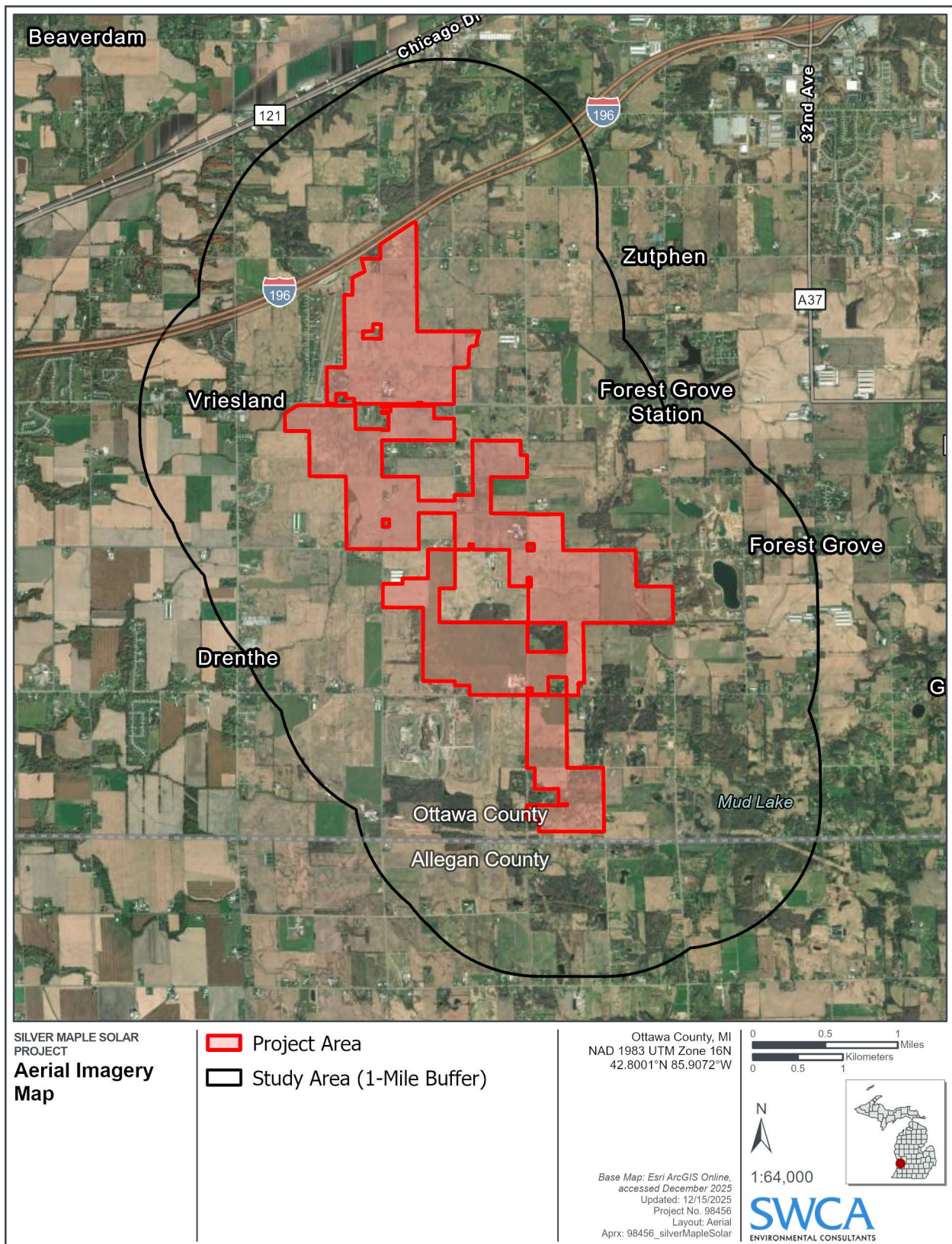


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

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SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 200T303; the site is within the current project area (see section 2.6 below for discussion of 200T303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Exhibit A-4.5 Page 344

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

[REDACTED]

2.8.1 Precontact Archaeological Sensitivity

[REDACTED]

[REDACTED]

2.8.2 Potential for Postcontact Archaeological Sites

[REDACTED]

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

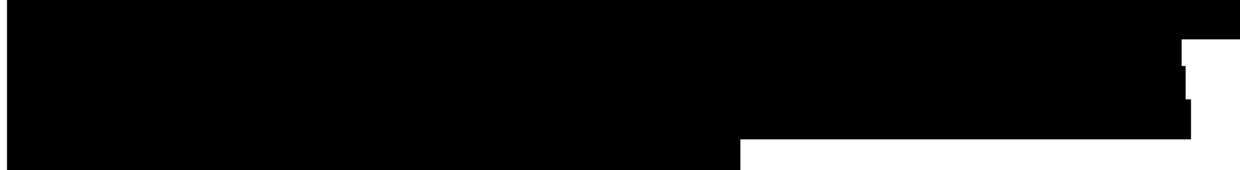
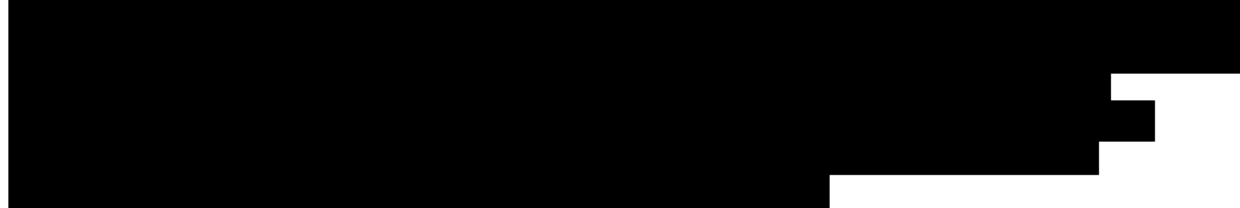
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

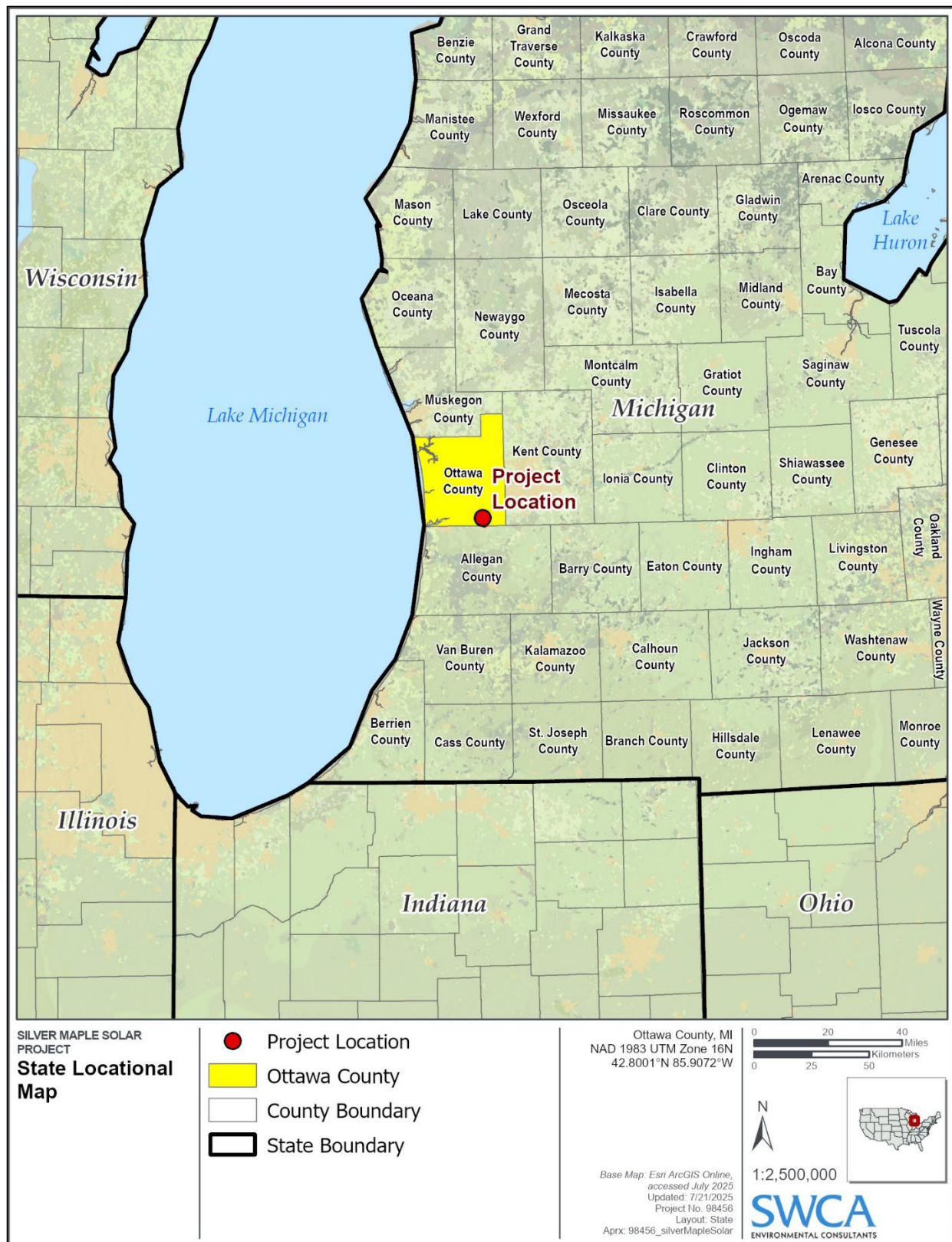


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

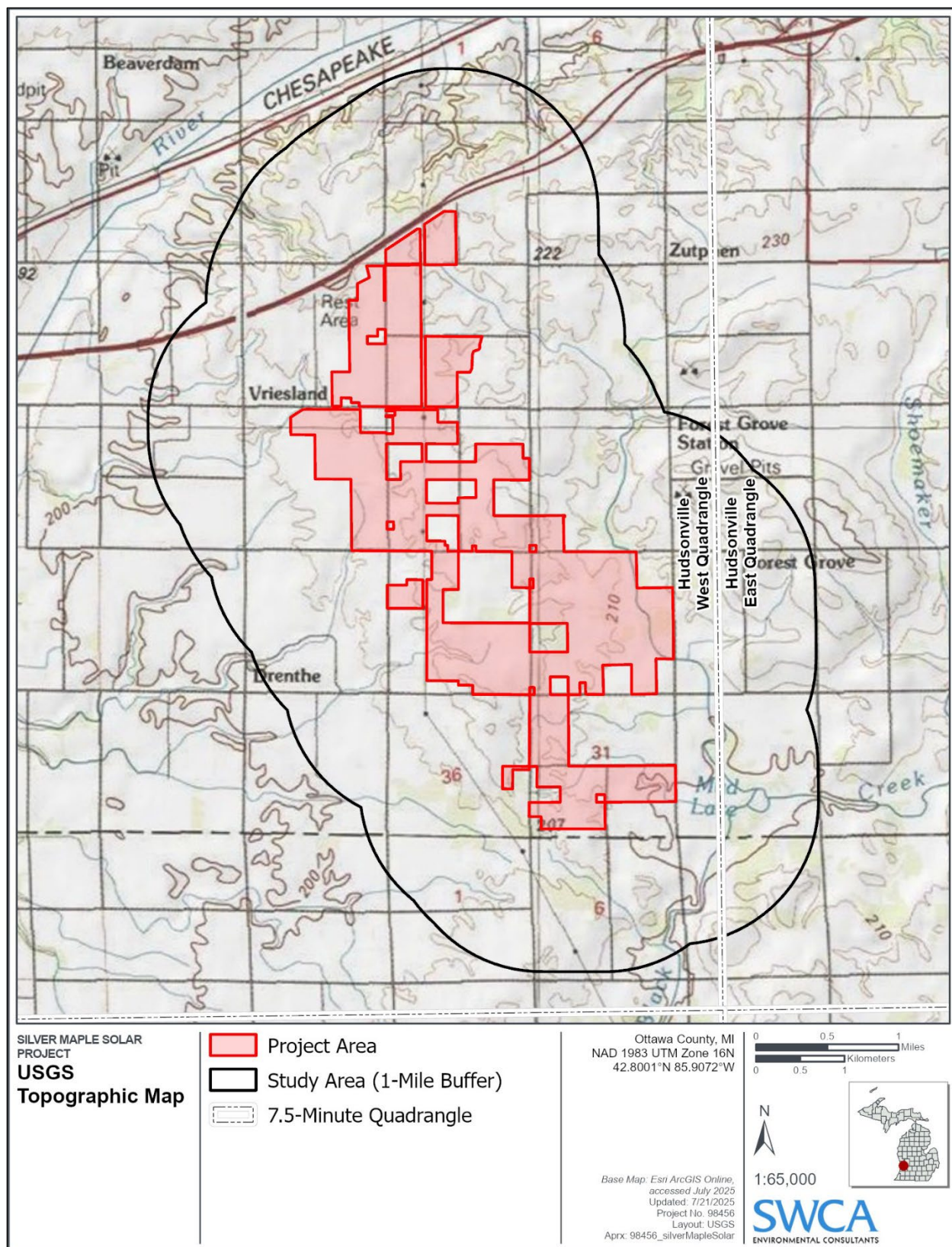


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

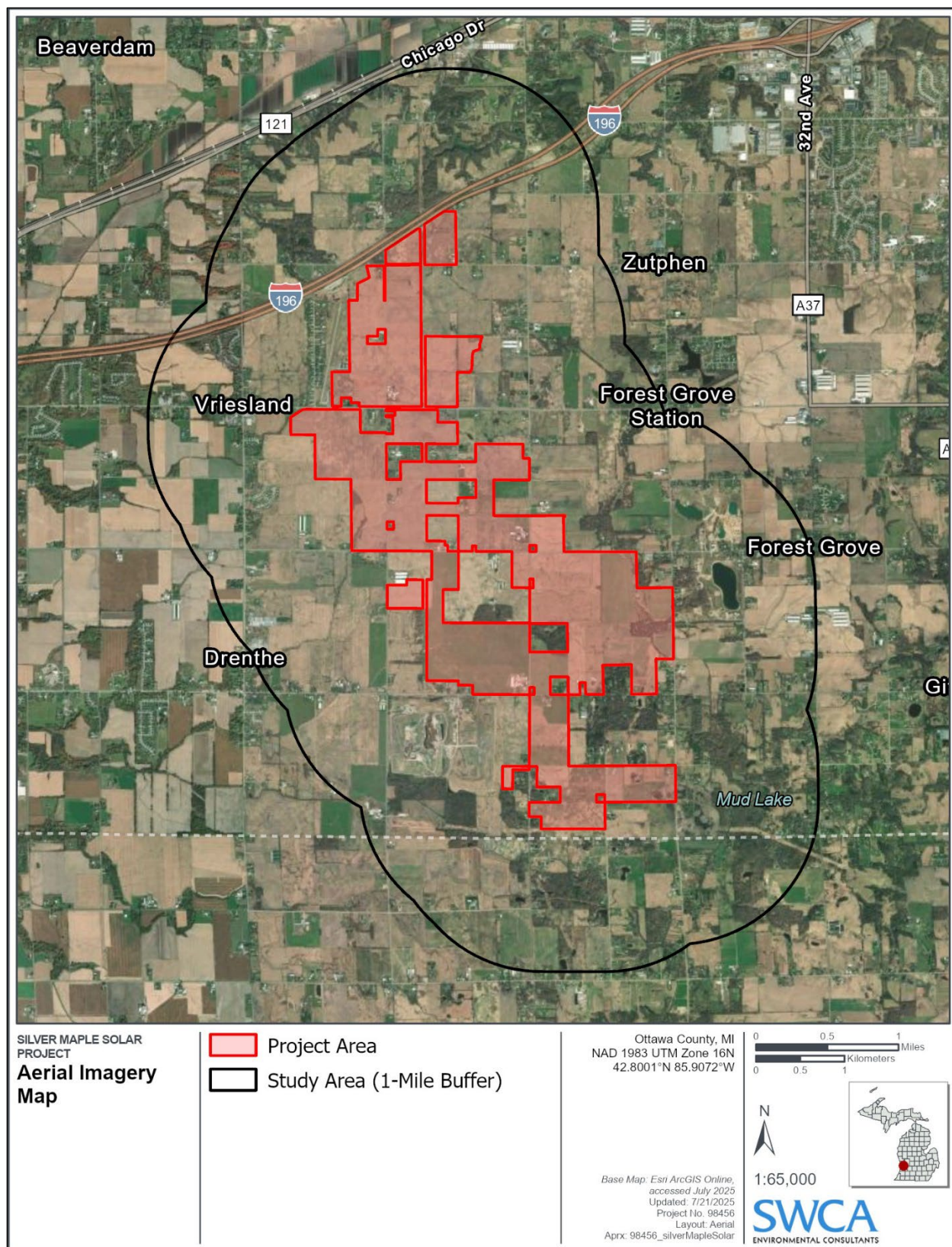


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

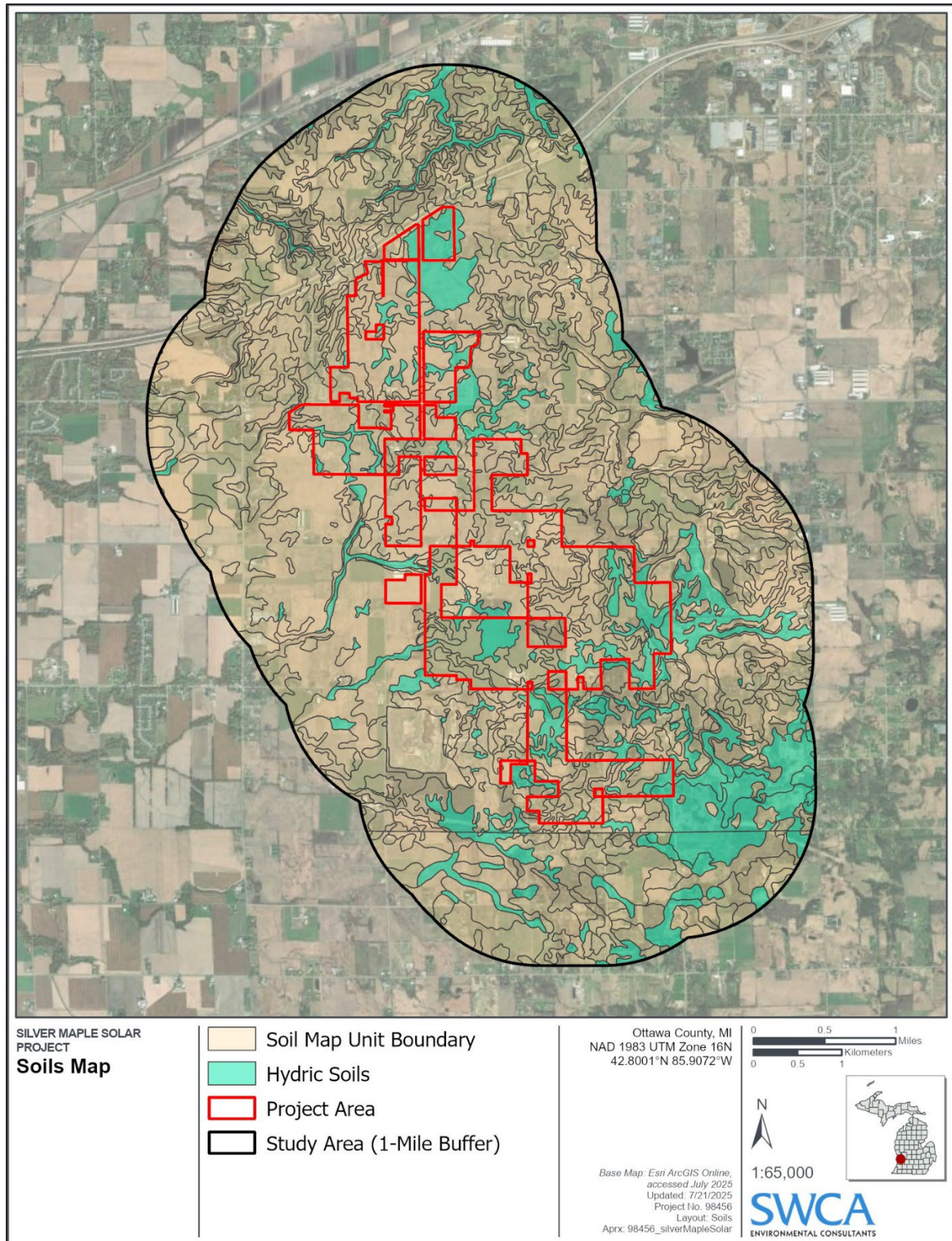


Figure A-4. Soils within the study area.

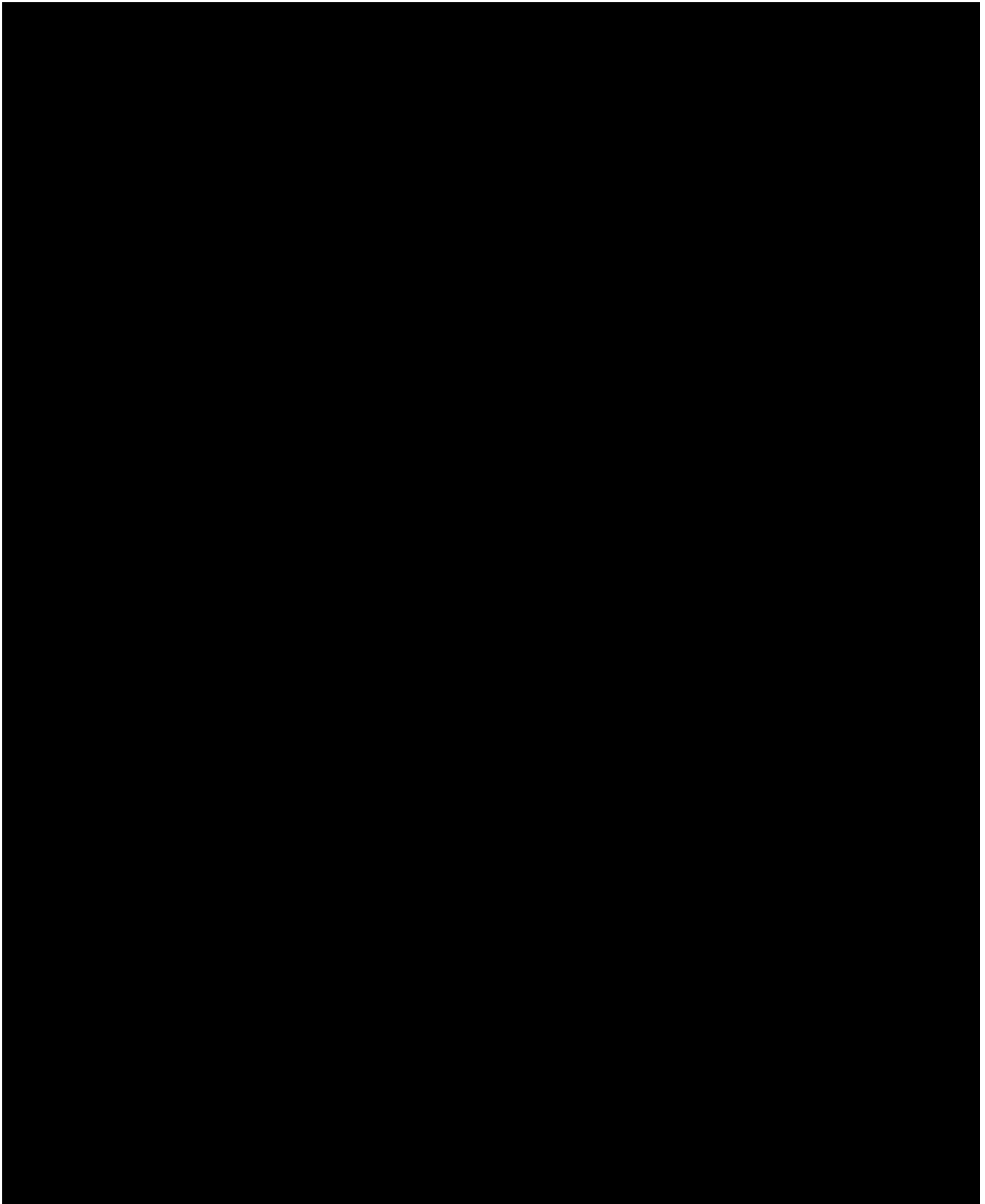


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.

Sault Ste. Marie Tribe of Chippewa Indians, Michigan



Silver Maple Solar Project - Consultation Letter

From Jonathan Libbon <JLibbon@swca.com>

Date Fri 1/16/2026 1:42 PM

To EDonmyer1@saulttribe.net <edonmyer1@saulttribe.net>

Cc Carol Mcknight <Carol.Mcknight@swca.com>; Quarles, Mark <mark.quarles@rwe.com>; Panther, John <john.panther@rwe.com>; Brochu, Joseph <Joseph.Brochu@rwe.com>; Erik Hartung <Erik.Hartung@swca.com>

 1 attachment (4 MB)

Silver_Maple_Consultation_LTR_15Jan2026_SaultSteMarieTribeChippewaIndians_signed[1].pdf;

Good Afternoon,

On behalf of Silver Maple PV, LLC, which is a wholly owned subsidiary of RWE Clean Energy LLC (RWE), we are reaching out to request your input on the Silver Maple Solar Project, a proposed solar facility in Ottawa County, Michigan. The facility will require a state siting certificate from the Michigan Public Service Commission (MPSC). The attached letter and documentation outline the project and provide details on the cultural resource work completed to date. We are seeking comments from your area of expertise regarding any potential environmental or cultural effects associated with this project.

Please let me or Joe Brochu (cc'd), the development manager from RWE, know if you have any questions about the project.

Thanks,

Jon

Jonathan R. Libbon, RPA | he, him, his
Cultural Resources Director

SWCA Environmental Consultants

80 Emerson Lane, Suite 1306

Bridgeville, Pennsylvania 15017

P 724.316.5547 | O 412.839.1001 ext. 5509



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January 15, 2026

Emma Donmyer
Repatriation and Historic Preservation Specialist
Sault Ste. Marie Tribe of Chippewa Indians
2 Ice Circle Chi Mukwa
Sault Ste Marie, MI 49783
Via Email: edonmyer1@saulttribe.net

Dear Emma Donmyer,

Silver Maple PV, LLC (Silver Maple), a wholly owned subsidiary of RWE Clean Energy, LLC (RWE) is proposing the **Silver Maple Solar Project** (the “Project”) in Ottawa County, Michigan. As the Project will need a state-siting certificate from the Michigan Public Service Commission (MPSC) per Michigan Public Act 233 of 2023 (PA 233), *Renewable Energy and Energy Storage Facility Siting*, Silver Maple is seeking review and comment on the Project’s application to the MPSC from Federally listed sovereign Nations with an interest in Michigan. Specifically, Silver Maple is seeking assistance in identifying and providing information on cultural resources potentially affected by the Project per, PA 233 Section 226.7b. Although Silver Maple requests a review and comment on the Project, the MPSC is the state regulatory agency and may be communicated with directly.

Based on Michigan State Historic Preservation Office (MI SHPO) guidance from their *Instructions for the Application for PA 233 Renewable Energy Storage Facility Siting Consultation Form*:

“**Public Act 233** requires the applicant for energy siting and storage facilities to consider and address impacts *to the environment and natural resources, including, but not limited to, sensitive habitats and waterways, wetlands and floodplains, wildlife corridors, parks, historic and cultural sites, and threatened or endangered species*. The applicant must submit this information to the Michigan Public Service Commission (MPSC) for consideration in permitting the project. In order to facilitate considerations of historic and cultural sites (hereafter Historic Properties), the MPSC has required applicants to consult with the State Historic Preservation Office (SHPO).”

This letter is part of the early coordination phase of the environmental review process, requesting comments associated with this Project. We are requesting comments from your area of expertise regarding any possible environmental or cultural effects associated with this Project. Please provide any additional information you may have regarding potential cultural resources in the Project area so they may be accounted for during the environmental review of this Project.

Project Description

The proposed Project is approximately 4 miles east of Zeeland, Michigan, and 3.6 miles southwest of Hudsonville, Michigan (Figure 1). Historic mapping places the proposed Project area in Sections 12, 13, 14, 23, 24, 25 26, 36 of Township 5 North, Range 14 West, and Sections 19, 29, 30, 31 of Township 13 North, Range 13 West as seen on the enclosed USGS 7.5-minute series Hudsonville West Quadrangle map (Figure 2). Silver Maple is proposing to construct a 200-megawatt (MW) alternating current (AC) solar photovoltaic power generating facility. The leased area/Project area boundary includes approximately

1,925.3 acres (779 hectares[ha]) (Figures 2 and 3). Construction will require approximately 1,536.6 acres (621.83 ha) of what is currently primarily agricultural land (see site plan boundary in Figure 1). Limited tree removal is planned across several areas, totaling approximately 0.30 acres (0.12 ha). Proposed work required for the Project includes construction of a switchyard, substations, access roads, fencing, MV electrical cabling, and solar panel structures. Construction may also include an operations and maintenance building.

Project Permitting

The proposed Project will require a siting certificate from the MPSC. PA 233 requires the Project proponent to identify and provide information on cultural resources potentially affected by the Project to the MPSC.

PA 233, which created a statewide process to permit solar, wind, and battery projects across the state and took effect November 29, 2024, applies to solar projects with a nameplate capacity of 50 MW or more, to wind projects with a capacity of 100 MW or more, and energy storage facilities with a capacity of 50 MW or more. Projects that fall into these categories must identify and provide information on the effects of the Project on environmental, natural, and cultural resources. Additional PA 233 information is available online at [State Project Reviews | MiPlace](#)¹, and a Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the MPSC is available online at [Guide for Involvement by Tribal Governments in Infrastructure Siting Cases at the Michigan Public Service Commission](#).²

Cultural Resource Investigations

The Area of Potential Effects (APE) is the area in which the proposed Project may cause alterations in the character or use of historic resources. As the site plan boundary includes all locations that may be impacted by ground disturbing activities related to the project undertaking, it is considered the physical APE (see Figure 1). The visual APE for assessing visual effects to historic-age resources is a 0.5-mile buffer from the boundaries of the Project area (e.g., leased area/project boundary) (see Figure 2). This boundary will be modified based on visual intrusions that may obscure view of the project.

Silver Maple has contracted SWCA Environmental Consultants (SWCA) to conduct the archaeological and architectural history surveys. Due to the presence of previously--documented archaeology sites in and near the Project area, SWCA will conduct an archaeological survey for the physical APE, including staging areas. An Unanticipated Discoveries Plan (Exhibit A-1.14 in the MPSC permit application) has been prepared.

Summary of Requested Action

We look forward to consulting with your office on this Project and to a continued dialogue. We ask that you provide any comments regarding the Project area following your review of the enclosure by February 16, 2026. Please send comments to silvermaplesolar@rwe.com. Please use the above Project name and Project description in your reply.

In summary, Silver Maple is requesting Tribal Governments to:

1. Review the Project information.
2. Identify cultural or environmental concerns, or specific resources that may be affected.
3. Ensure that any cultural resources are addressed in the MPSC permitting process.

¹ <https://www.miplace.org/historic-preservation/programs-and-services/cultural-resource-management-and-planning/state-project-reviews/>

² https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/MPSC_Tribal_Involvement_Guide.pdf?rev=399582a67fbc46e883e6f21d1325e785&hash=AA471378E81539AFBBA758AB04FB3D25

All comments will be documented and considered in Project design. Consultation with SHPO and the THPOs included in the distribution list below will be incorporated into the cultural survey plan, recordation, and design updates as needed. Your timely response will greatly help us incorporate your concerns into the development of the Project.

Respectfully,



Joseph Brochu
RWE Development Manager
silvermaplesolar@rwe.com

cc: Sarah Mulkoff, Michigan Public Service Commission
Carol McKnight, SWCA Environmental Consultants
Jonathan Libbon, SWCA Environmental Consultants

Distribution List:

Bay Mills Indian Community
Grand Traverse Bay Band of Ottawa and Chippewa Indians
Hannahville Indian Community, Michigan
Keweenaw Bay Indian Community
Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians, Michigan
Match-e-be-nash-she-wish Band of Pottawatomi Indians of Michigan
Nottawaseppi Huron Band of the Potawatomi Indians
Pokagon Band of Potawatomi Indians, Michigan and Indiana
Saginaw Chippewa Indian Tribe
Sault Ste. Marie Tribe of Chippewa Indians, Michigan

Enclosures:

1. Figures
 - a. Figure 1: State location map
 - b. Figure 2: Portions of the USGS 7.5' series Tecumseh South and Palmyra Michigan Topographic Quadrangles showing the Project area.
 - c. Figure 3: Aerial view of the Project area location in Palmyra Township, Lenawee County, Michigan.
2. Cultural Desktop Report

Enclosure 1

Figures

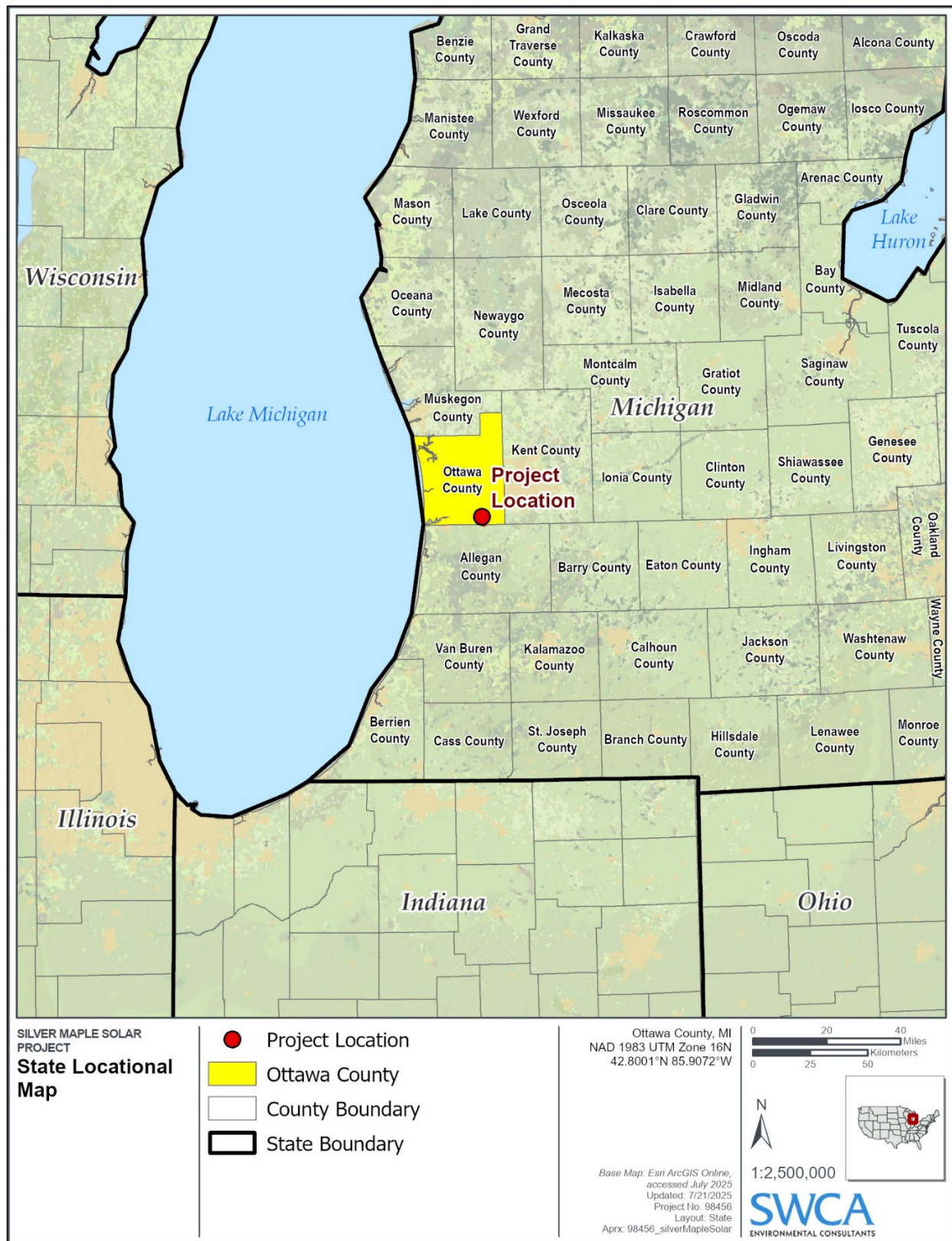


Figure 1. Location of the proposed Silver Maple Project area in Michigan.

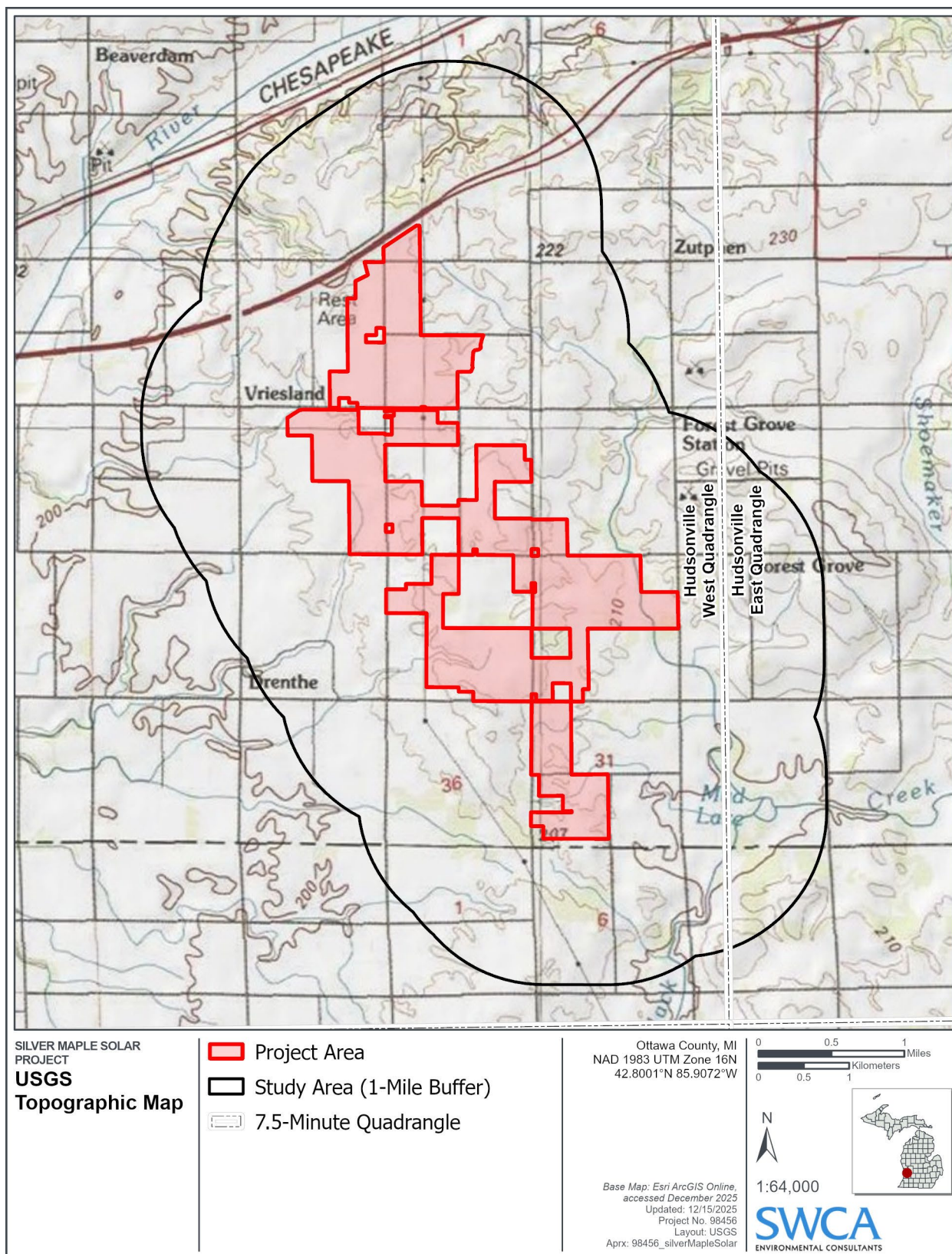


Figure 2. Portion of the USGS 7.5' series Hudsonville West, Michigan Topographic Quadrangle showing the site plan boundary and leased area/Project boundary.

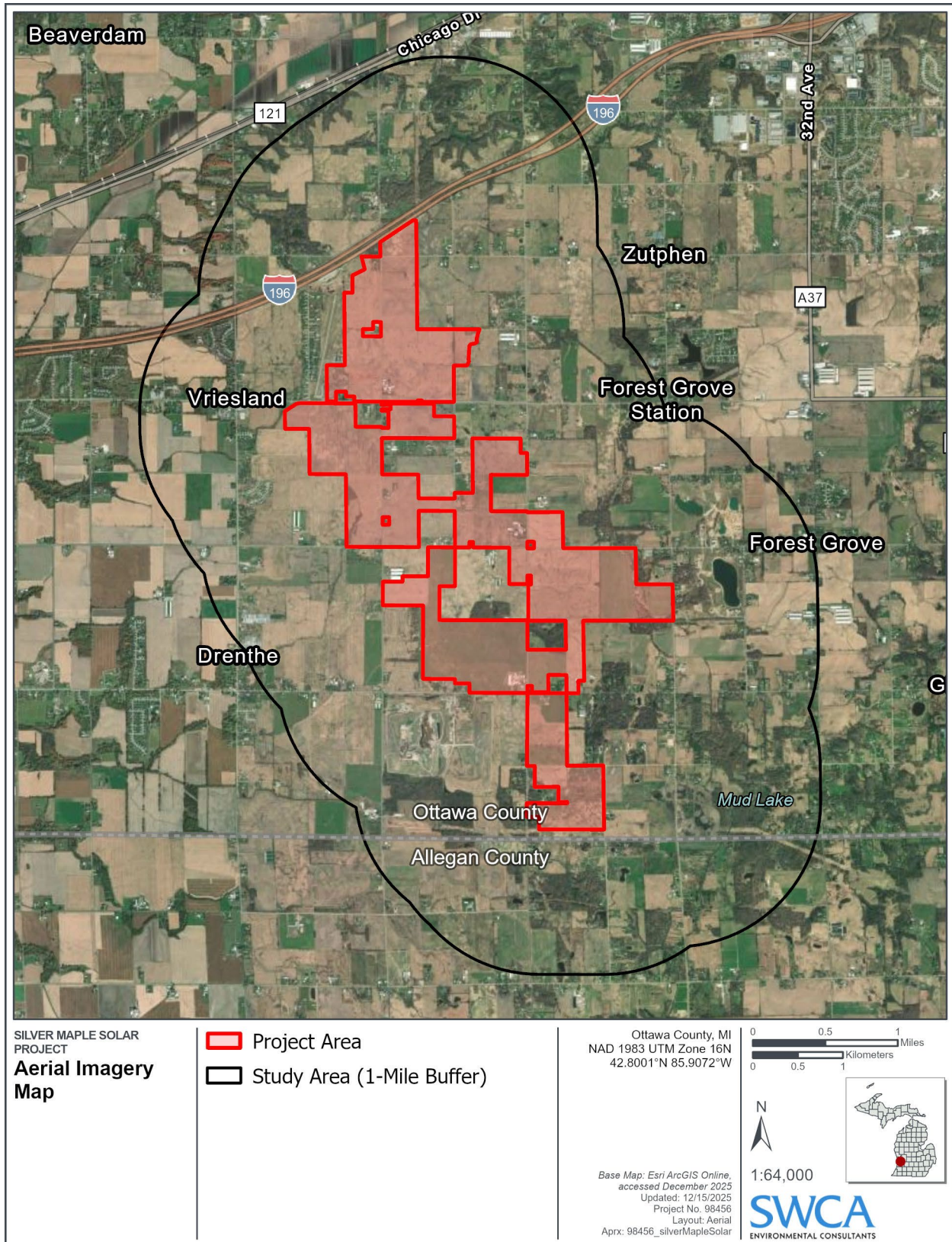


Figure 3. Aerial view showing the site plan boundary and leased area/Project boundary in Zeeland and Jamestown Townships, Ottawa County, Michigan.

Enclosure 2

Cultural Desktop Report



Cultural Resources Desktop Review for the Silver Maple Solar Project, Ottawa County, Michigan

JANUARY 2026

PREPARED FOR

RWE Clean Energy, LLC

PREPARED BY

SWCA Environmental Consultants



CULTURAL RESOURCES DESKTOP REVIEW FOR THE SILVER MAPLE SOLAR PROJECT, OTTAWA COUNTY, MICHIGAN

Prepared for

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Jonathan Libbon, M.A., RPA

SWCA Project No. 98456

SWCA Cultural Resources Report No. 25-644

January 2026

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1 INTRODUCTION

SWCA Environmental Consultants (SWCA) completed a cultural resources desktop review for the proposed Silver Maple Solar Project (project) on behalf of RWE Clean Energy (RWE). The project is located in Ottawa County, Michigan (Figure A-1 in Appendix A). The project area spans approximately 937.3 hectares (2,316 acres) of privately owned land in the townships of Zeeland and Jamestown. SWCA completed the desktop review for the project area plus a surrounding 1.6-kilometer (1.0-mile) buffer around the project area henceforth referred to as the study area (Figures A-2 and A-3 in Appendix A).

The objective of the desktop review was to identify existing cultural resources within the project Area and to assess the probability of encountering intact cultural materials to inform project facility siting. Additionally, the study area was evaluated to gain an understanding of the type and density of cultural resources in the vicinity of the project area to allow for conclusions to be drawn regarding potential undocumented resources that may be present within the project area. This report summarizes the methods SWCA used to complete the desktop review and presents the results of background research. It does not serve as cultural resource clearance for the project, although the data provided can be used to streamline consultation and future reporting, if necessary.

1.1 Project Personnel and Qualifications

This document was prepared by Erin Walpole, a staff cultural resource specialist at SWCA, James Parker, Megan Daniels, and Jonathan Libbon. Jonathan Libbon meets the Secretary of the Interior's Professional Qualifications for both Archaeology and Historic Architecture, as well as being listed on the Michigan SHPO's list of qualified consultants. James Parker meets the Secretary of the Interior's Professional Qualifications for Archaeology and is listed with the Michigan SHPO as a qualified consultant. Megan Daniels is an architectural historian who meets the Michigan SHPO's requirements as well as the Secretary of the Interior's Professional Qualifications for Architectural History.

2 CULTURAL RESOURCES DATA PRESENTATION

2.1 Regulatory Framework

Solar projects in Michigan can come under the purview of two primary cultural resources regulations, the National Historic Preservation Act (NHPA) via federal involvement and various state level regulations such as Michigan's Natural Resources and Environmental Protection Act or Michigan's Public Act 233. Regardless of whether a project needs to comply with the NHPA or a state level regulation, the Michigan State Historic Preservation Office (MI SHPO) administers both.

If the project is deemed a federal undertaking (requiring a federal permit, license, or approval; located on federally owned or managed land; or receiving federal financial assistance), a cultural resources survey most likely would be mandated by the lead federal agency to ensure compliance with Section 106 of the NHPA. The scope of required cultural resources surveys would then be determined by the federal lead agency in consultation with the MI SHPO and, if applicable, the pertinent Tribal Historic Preservation Offices that have an ancestral link to the project area, as defined in both Section 101 of the National Environmental Policy Act and Section 106 of the NHPA. For solar projects in Michigan, federal involvement typically consists of Section 404 of the Clean Water Act permitting, henceforth referred to as Section 404 permitting. Unlike many states, the U.S. Army Corps of Engineers has delegated authority for Section 404 permitting to the Michigan Department of Environment, Great Lakes, and Energy

(EGLE). EGLE policy for Section 106 of the NHPA compliance in response to Section 404 permitting is to consult with the MI SHPO to determine if there are any previously recorded resources listed or eligible for the NRHP adjacent to the jurisdictional wetland or waterbody being impacted. If there are not, then no further cultural resource documentation is needed for compliance with Section 106 of the NHPA.

For projects that are not considered federal undertakings but require permitting through EGLE, the agency will review the project in a manner similar to the Section 404 permitting process. EGLE will determine whether any previously recorded listed, or eligible cultural resources are present and assess the project's potential to affect those resources.

Additionally at the state level, Public Act 233 created a statewide process to permit solar, wind, and battery projects. Section 226.7.1 of Public Act 233 requires applicants to consider and address impacts on historic and cultural sites. As such, the project will be required to identify and provide information on cultural resources potentially affected, if any, in order to get an application approved by the Michigan Public Service Commission (MPSC). Cultural resource consultation with the MI SHPO is required as part of the MPSC application process.

At the local level, there are currently no ordinances regarding cultural resources for Jamestown Township and Zeeland Township or Ottawa County.

2.2 Methodology

An SWCA archaeologist obtained information on previous cultural resources surveys, previously recorded archaeological resources, and architectural resources within the study area in July 2025.

SWCA conducted a review of the MI SHPO's Cultural Resources Information System (CRIS), which provides information on previous cultural resources surveys, previously recorded archaeological resources, previously recorded historic architectural resources, and archaeological survey reports. Many archaeological survey reports are not currently available as the MI SHPO is scanning these files for upload into CRIS. SWCA reviewed the aboveground site and survey research portal in CRIS as well as the National Register of Historic Places (NRHP) database to identify previously recorded aboveground historic properties that may be in the project area or study area (MI SHPO 2025; National Park Service 2025).

In addition to the site file search, SWCA investigated historic plats, topographic maps, and historic aerial imagery of the project area and study area. SWCA also researched environmental factors such as modern and historic land use and soil units mapped by the Natural Resources Conservation Service (NRCS) to determine the likelihood of the project encountering previously unrecorded precontact or postcontact archaeological resources.

2.3 Environmental Overview

Understanding the regional and local environmental setting in which a project is located can provide insight into where archaeological resources could be present. The project area is within the Eastern Lake section of the Central Lowland province of the Interior Plains (NRCS 2022:352). The Eastern Lake section is a nearly level glacial drift plain with scattered areas of gently rolling to strongly rolling hills. Elevation ranges from approximately 175 to 250 meters (m) (580–820 feet) whereas local relief ranges from 9 to 72 m (30–235 feet). The project area is within the Bosch and Hulst Drain watershed (U.S. Environmental Protection Agency, 2025). The surface area of this region is mainly covered with deposits

of glacial drift with some deposits of unconsolidated sand and gravel outwash. The bedrock underlying the glacial drift consists of sandstone and shale (NRCS 2022:354).

Preservation of archaeological deposits is a critical component of determining significance of archaeological resources. Archaeological sites located in deep soils that have developed relatively quickly, such as soils derived from alluvial, colluvial or aeolian deposition, have a higher potential to contain intact archaeological deposits. From a desktop standpoint, understanding the types of soil present in a project area can better inform the potential for significant archaeological resources to be present. There are 35 soil series mapped within the project area by the NRCS (Table 1, Figure A-4 in Appendix A). The soils range from very poorly drained to well-drained loams to sandy or clayey loams, some of which are hydric. The most common soils for the project area include Blount loam, 0 to 2 percent slopes; Morley loam, 2 to 6 percent slopes; Sims loam; Morley loam, 6 to 12 percent slopes, eroded; Kibbie loam, 2 to 6 percent slopes; Conover loam, 2 to 6 percent slopes; Blount loam, 0 to 2 percent slopes; Toledo silty clay loam; and Tuscola fine sandy loam, 2 to 6 percent slopes. These soil types, and their implication for site formation processes and archaeological potential, are discussed further in Section 2.8.

Table 1. Soils Within the Project Area

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
BIA	Blount loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains	Loamy till
BIB	Blount loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains	Loamy till
By	Bruce loam	Poorly drained	Depressions on outwash plains, depressions on lake plains	Stratified loamy lacustrine deposits
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	Very poorly drained	Depressions on till plains, depressions on glacial drainage channels, depressions on moraines, depressions on outwash plains	Woody organic material
Cm	Cohoctah loam	Poorly drained	Flood plains	Loamy alluvium
CnB	Conover loam, 2 to 6 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	Very poorly drained	Lakebeds on moraines, lakebeds on outwash plains, lakebeds on glacial drainage channels	Herbaceous organic material over marl
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	Well drained	End moraines	Coarse-loamy till
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	Well drained	End moraines	Coarse-loamy till
KoA	Kibbie loam, 0 to 2 percent slopes	Somewhat poorly drained	Lake plains, outwash plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits
KoB	Kibbie loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains	Stratified loamy glaciofluvial deposits and/or stratified silty glaciolacustrine deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
La	Lacota silt loam	Poorly drained	Drainageways, lake plains, outwash plains	Loamy over sandy lacustrine deposits
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MmB	Menominee loamy sand, 2 to 6 percent slopes	Well drained	Till plains	Sandy glaciofluvial deposits over loamy till
MnA	Metamora sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Till plains, moraines	Loamy till
MnB	Metamora sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Moraines, till plains	Loamy till
MoB	Wawasee loam, 2 to 6 percent	Well drained	End moraines, ground moraines	Calcareous loamy till
MoC	Wawasee loam, 6 to 12 percent slopes	Well drained	End moraines, ground moraines	Calcareous loamy till
MtB	Morley loam, 2 to 6 percent slopes	Moderately well drained	Moraines	Loamy till
MtC2	Morley loam, 6 to 12 percent slopes	Well drained	Moraines	Loamy till
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	Well drained	Moraines	Loamy till
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	Moderately well drained	Till plains, moraines	Clayey till and/or loamy till
OwB	Owosso sandy loam, 2 to 6 percent slopes	Well drained	Moraines	Loamy glaciofluvial deposits over loamy till
RcA	Richter sandy loam, 0 to 2 percent slopes	Somewhat poorly drained	Glacial drainage channels, outwash plains, lake plains	Loamy and/or stratified sandy lacustrine deposits
RcB	Richter sandy loam, 2 to 6 percent slopes	Somewhat poorly drained	Outwash plains, lake plains, glacial drainage channels	Loamy and/or stratified sandy lacustrine deposits
Sh	Shoals loam	Somewhat poorly drained	Flood plains	Fine-loamy alluvium
Sm	Sims loam	Poorly drained	Depressions on till plains	Clayey till
SpB	Spinks loamy sand, 2 to 6 percent slopes	Well drained	Till plains, outwash plains	Sandy outwash
SpC	Spinks loamy sand, 6 to 12 percent slopes	Well drained	Moraines, glacial drainage channels, outwash plains	Sandy drift
Tc	Toledo silty clay loam	Very poorly drained	Depressions on lake plains, depressions on glacial drainage channels	Clayey glaciolacustrine deposits
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	Well drained	Moraines, recessional moraines	Coarse-loamy till
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	Well drained	Glacial drainage channels, moraines, recessional moraines	Coarse-loamy till
To	Tonkey sandy loam	Poorly drained	Glacial drainage channels, lake plains	Stratified sandy and/or loamy glaciofluvial deposits

Map Unit Symbol	Map Unit Name	Drainage	Associated Landform(s)	Parent Material
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	Moderately well drained	Lake plains	Stratified loamy and/or silty lacustrine deposits
Wt	Washtenaw loam	Very poorly drained	Depressions	Loamy alluvium over drift

Source: NRCS (2024)

2.4 Historical Land Use

SWCA reviewed historic plat and topographic maps, as these sources provide information on past land use within the project area that may indicate the probability of encountering significant precontact and postcontact cultural resources within the project area. This review also sought to identify areas of past disturbance that would preclude the need for archaeological survey. Overall, the cartographic sources reviewed indicate that there has been a general consistency in the road network and land use patterns from the late nineteenth century into the modern era across the project area.

The earliest available map of the project area is a General Land Office survey map from 1833 (Bureau of Land Management General Land Office 2024). The project area is depicted as uninhabited. The Black River is a winding water course to the east, its tributaries extending throughout the project area. No structures are depicted.

An 1876 plat map shows that the project area and study area as divided into medium to large landholdings. Several roads are in the project area, some of which follow their modern alignments. Several structures, primarily fronting the roads, are depicted within or near the project area. Several drainages are also shown running through or near the project area (Belden and Co. 1876).

Three 1912 plat maps were reviewed to cover the span of the project area. These plat maps show additional roads and two railroads, including the Grand Rapids, Holland and Chicago Railroad which runs parallel to the modern Byron Road through the southern half of the project area and the Pere Marquette Railroad which is where the current Chesapeake and Ohio Railroad is today, just north of the project area, within the study area. Several structures are depicted on landholdings within the project area. These structures are adjacent to roadways, most of which are consistent with modern roads. There are unnamed branches of the Black River extending throughout the project area. There is one school in the east-central portion of the project area.

On a 1916 plat map, one school and the Grand Rapids, Holland and Chicago Railroad are present within the project area. No other structures are visible (Bowen, 1916). Two plat maps dating from the 1920s were reviewed, one for Zeeland Township and one for Jamestown Township. Both plat maps show a further division of parcels within each township block. There are no residential structures on these maps; however, the Forest Grove Cemetery can be seen in the project area, as well as the same school mentioned above, as seen on the 1916 plat map in Jamestown Township (Hixon and Co., N.D. a).

SWCA also reviewed historic topographic maps to help further determine the land use of the project area and study area. Four historic topographic maps from 1958 to 1980 show that the landscape has remained relatively static from the early twentieth century to the present (USGS 2024). On the earliest available topographic map (Grandville, Michigan, 1958, 1959 edition), several highways cut through the center of the project area, and multiple structures are visible along roadways. The 1961 and 1962 Grand Rapids, Michigan, topographic maps reveal a similar image. The 1980 Hudsonville West, Michigan quadrangle shows that residential development has experienced little change from 1962 within the project area, and between Drenthe, Michigan and Zutphen, Michigan, apart from Interstate 196. A transmission line is

visible trending north-south through the center of the project area. Forest Grove Cemetery can be seen on topographic maps published in 1958 and after 1958 (USGS 2024).

A review of 22 aerial photographs taken from 1947 to 2022 indicates that minimal residential development occurred within the project area. On the aerial images beginning in 1947, the landscape is agricultural with isolated farmsteads along roadways. There are a handful of small, forested areas in the southern and southeastern parts of the project area. Drainages are visible either as scars on the landscape or are lined with trees. Apart from the interstate and the airport which lie within the study area, minimal change to the environment can be seen within the project area between 1947 and 2023 (Historic Aerials 2025).

2.5 Previous Cultural Resources Surveys

A review of MI SHPO records identified four previously conducted cultural resources surveys overlapping small portions of the project area (ER7902, ER99-597, ER00-301, and ER00-309), and four surveys conducted within the study area (Table 2) (MI SHPO CRIS).

Project ER-7902, which overlaps the southwestern portion of the project, was a Phase I survey conducted in 1984. The survey did not identify any archaeological sites (Flanders 1984). Project ER00-301, which overlaps the northern portion of the project, was a Phase I survey conducted in response to improvements of US Interstate 196. The survey identified site 20OT303; the site is within the current project area (see section 2.6 below for discussion of 20OT303). The MI SHPO does not have any information regarding the scale or extent of the remaining two surveys within the project area (ER99-597 or ER00-309).

Table 2. Previous Cultural Resources Surveys in the Project Area and Study Area

Project ID	Survey Year	Surveyors	Report Title	Location
ER-7902	1984	Flanders, Richard E.	<i>Archaeological Survey: Proposed Sanitary Landfill, Zeeland Township, Ottawa County, Michigan</i>	Project Area
ER99-597	Information not available	Information not available	Information not available	Project Area
ER00-301	2000	Dunham, Sean, Kent C. Taylor, and Donald J. Weir	<i>Results of the Phase I Archaeological Survey of the Proposed Maverick Pipeline in Jamestown and Zeeland Townships, Ottawa County, Michigan</i>	Project Area
ER00-309	Information not available	Information not available	Information not available	Project Area
"Garland and Parachini, 1981"	1981	Garland, Elizabeth B., and K. Parachini	<i>Settlement Pattern Survey in Allegan County, Michigan 1980 Field Season. NR Grant Program final report.</i>	Study area
ER-7862	1984	Flanders, Richard E.	<i>Archaeological Survey: Woodside Resource Recovery Landfill, Zeeland Township, Ottawa County, Michigan</i>	Study Area
ER02-261.16.624550	2016	Branstner, Mark C.	<i>Cultural Resource Inventory Survey: Proposed Cell Tower Site, Jamestown Twp Fire, 1525 36th Avenue, Hudsonville, Ottawa County, MI</i>	Study Area

[illegible]

Architectural resources, which consist of historic buildings, structures, and districts, have the potential to be visually affected by projects, and per MI SHPO guidelines, the effect on such resources must be accounted for. SWCA reviewed the National Park Service's NRHP database for Ottawa and Allegan Counties, Michigan, regarding information on historic districts, buildings, archaeological sites, and other properties eligible for or listed in the NRHP. The NRHP database did not identify any NRHP-listed resources within the project or study areas (National Park Service 2025).

SWCA also reviewed historic architecture data provided by the MI SHPO in July 2025. No previously recorded architectural resources are within the project area. The MI SHPO site files indicate one architectural resource within the study area (Table 4, see Figure A-5). This resource, the New Vriesland Church (P24569) is in the northwestern portion of the study area, approximately 0.57 miles west of the project area.

A search of the Michigan Historical Markers site (Michigan Department of Natural Resources [MI DNR] 2025), and historic topographic maps and aerial photography identified the 1869 Vriesland Reformed Church. This church is within the study area, just east of the New Vriesland Church.

No recorded cemeteries with the MI SHPO are documented within the project or study area. Based on the historic map review (see Section 2.4), one postcontact cemetery (Forest Grove Cemetery) is within the study area, approximately 0.93 mile northeast of the project area.

Table 4. Previously Recorded Historic Architectural Resources in the Study Area

Site ID	Historic Name	Municipality	NRHP Status	Location
P24569	New Vriesland Church	Zeeland Township	Unevaluated	Study Area
N/A	1869 Vriesland Reformed Church	Zeeland	Unevaluated	Study Area

2.8 Archaeological Sensitivity

[REDACTED]

2.8.1 Precontact Archaeological Sensitivity

[REDACTED]

[REDACTED]

2.8.2 Potential for Postcontact Archaeological Sites

[REDACTED]

3 SUMMARY AND CONCLUSIONS

SWCA conducted this cultural resources desktop review to support RWE's Silver Maple Solar Project. Based on SWCA's analysis of background data, several conclusions can be drawn regarding the project's relationship to cultural resources. These conclusions are intended to inform the development and siting of the project and are organized into three categories:

1. Conclusions about previously recorded resources and the project area's environment as it relates to cultural resources,
2. Conclusions regarding the potential for unrecorded cultural resources within the project area, and
3. Conclusions concerning the various regulatory scenarios that may apply to the project.

Specific details regarding each of these categories are provided below.

3.1 Previously Recorded Resources and the Environment of the Project

Four previous archaeological surveys have been undertaken within the project area. All four surveys cover only small sections of the current project area, were conducted between the 1980s and early 2000s, and have little relevance to the current undertaking due to the age and the fragmented nature of the records from all three efforts.

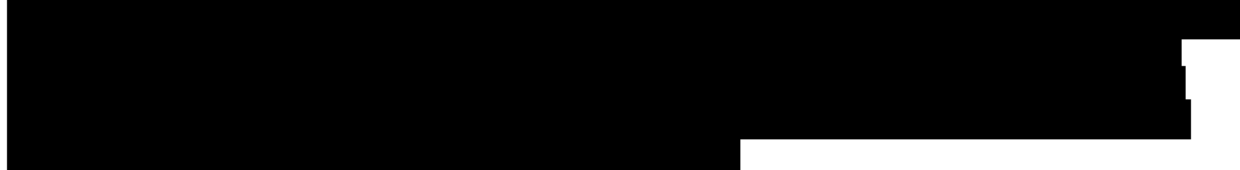
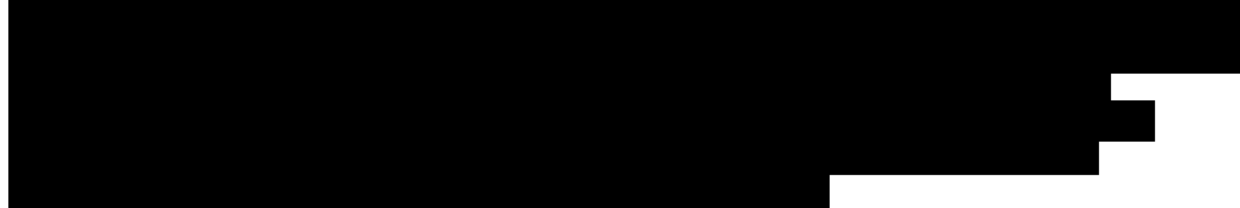
[REDACTED]. Based on desktop sources alone, the impact to the project design caused by these resources cannot be determined. The design of the project will avoid all impacts to both sites. The previously recorded architectural resources within the study area (the New Vriesland Church, the Vriesland Reform Church, and the Forest Grove Cemetery) are far enough from the project area, and space between these resources and the project contain enough visual obstructions to make any visual impact caused from the project insubstantial. A review of the past land use within the project area did not identify any evidence of widespread disturbance, such as surface mining, large scale quarry/barrow pits, or extensive areas of prior development/silviculture, that would preclude the possibility of archaeological sites to be present.

3.2 Cultural Resource Probability

[REDACTED]

[REDACTED]

loam. Within the project area, these soils occur near perennial water sources like unnamed tributaries of



3.3 Cultural Resource Regulatory Scenarios

While the exact regulatory framework the project will need to comply with is not established at this time (see Section 2.1), SWCA has identified the various regulatory scenarios that the project may follow and the implications of each scenario as it relates to cultural resources.

As discussed in Section 2.1, if a federal agency is involved in the project, then the project must comply with Section 106 of the NHPA. Solar projects in Michigan are unlikely to have federal involvement outside of Section 404 of the Clean Water Act permitting. The US Army Corps of Engineers has delegated this permitting to EGLE, which only requires a cultural resource effort if NRHP listed or eligible resources are present. EGLE does not require consultation for resources which have not been evaluated for listing on the NRHP. As no NRHP eligible or listed resources are documented in the project area, if Section 404 permitting is required, a cultural resource effort will not be necessary to support this permit application. The two previously recorded resources (20OT03/310 and 20OT340) within the project area are not evaluated for listing on the NRHP, thus they will not require EGLE to initiate consultation with the SHPO.

The project will need to obtain a National Pollutant Discharge Elimination System Permit from EGLE. As such, the project design will need to consider cultural resource listed on or eligible for the NRHP and potentially consult with the SHPO. As there are no such resources within the project area, avoidance measures will not be required. Per EGLE policy, no further cultural resource work will be needed to obtain the permit because there are no NRHP-listed or -eligible properties within the project area.

As the project will need to obtain a permit from the MPSC prior to construction, consultation with the Michigan SHPO will be required, per Section 226.7.1 of Public Act 233. Notably, the formal consultation

application established by the Michigan SHPO and the MPSC acknowledges that a full site study is not always required; rather, the need for a comprehensive investigation depends on project-specific factors and professional judgment.

Preliminary analysis and consultation with the SHPO shows that while there is limited prior archaeological survey in and around the project, the proposed project does have areas of high, moderate, and low probability to contain NRHP eligible resources.

Based on SWCA's analysis and experience, a targeted archaeological investigation focusing on areas of higher probability would be justified – rather than investigating the entire project's limit of disturbance. To accomplish this targeted investigation, SWCA proposes to establish a statistically derived analysis using a large training dataset from the Eastern Lake Physiographic Section, where the project is located. SWCA's professional opinion is that such an approach is both efficient and effective and is supported by empirical data and established best practices.

The analysis would utilize environmental variables and information from previously recorded archaeological sites from the Eastern Lake Physiographic Section within Michigan to establish areas with an elevated potential to contain archaeological resources. This probability-based approach enables timely and expensive field surveys to focus on areas most likely to contain NRHP-eligible resources, providing scientific justification for targeted investigations where significant and substantial archaeological deposits are more probable to be located, rather than a blanket full-coverage survey.

Consultation with the SHPO will be necessary to determine the precise parameters of the statistical pattern analysis and to establish the model that will be used to guide surveys. SWCA recommends that the consultation process consider this data-driven, probability-based methodology, as it aligns with both regulatory guidance and sound scientific practice.

As there are currently no local ordinances for Jamestown Township and Zeeland Township or Ottawa County pertaining to cultural resources, local permitting of the project would not necessitate cultural resource survey or documentation.

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APPENDIX A

Figures

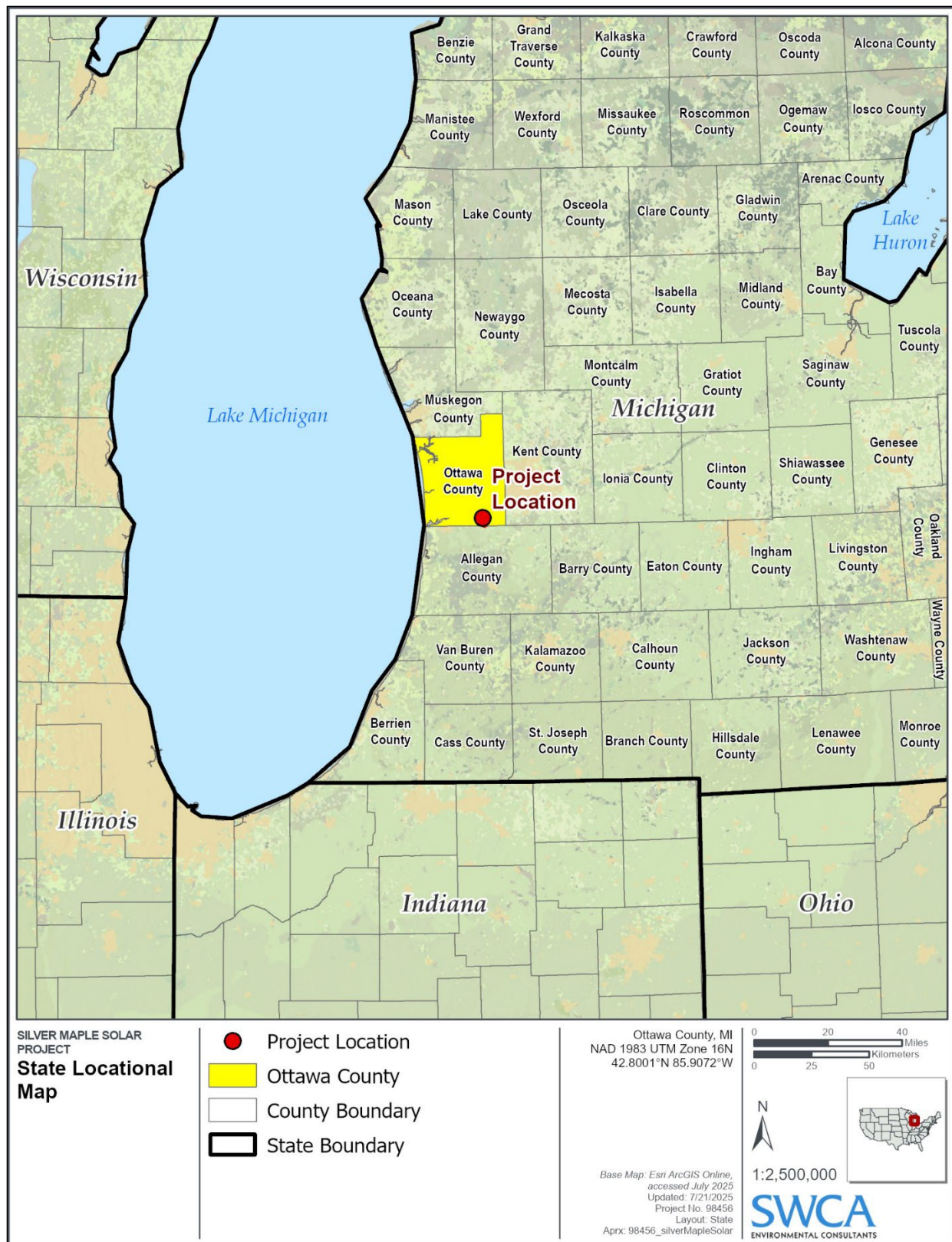


Figure A-1. Location of the proposed Silver Maple Solar project area in Michigan.

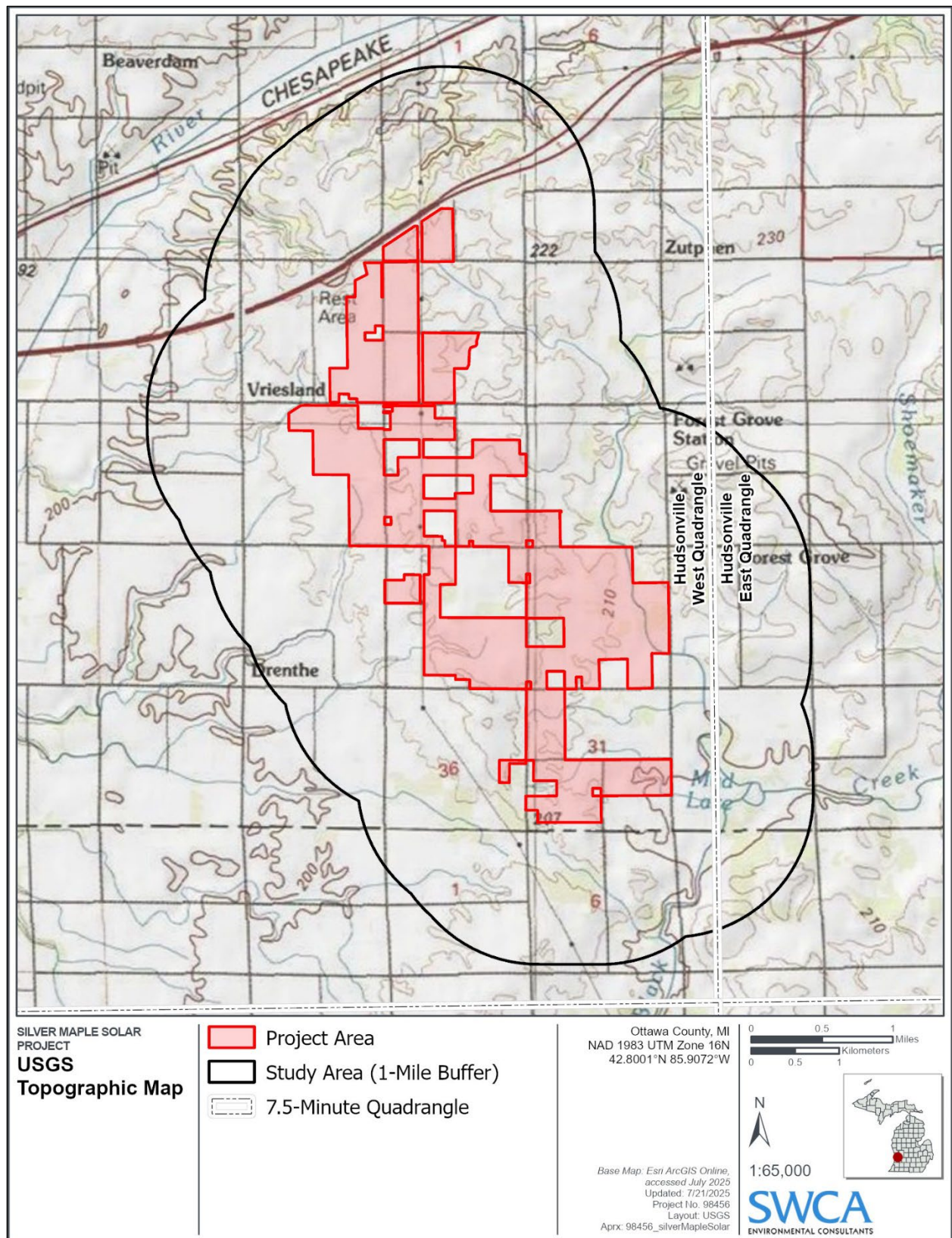


Figure A-2. Location of the study area for the proposed Silver Maple Solar Project on a USGS topographic map.

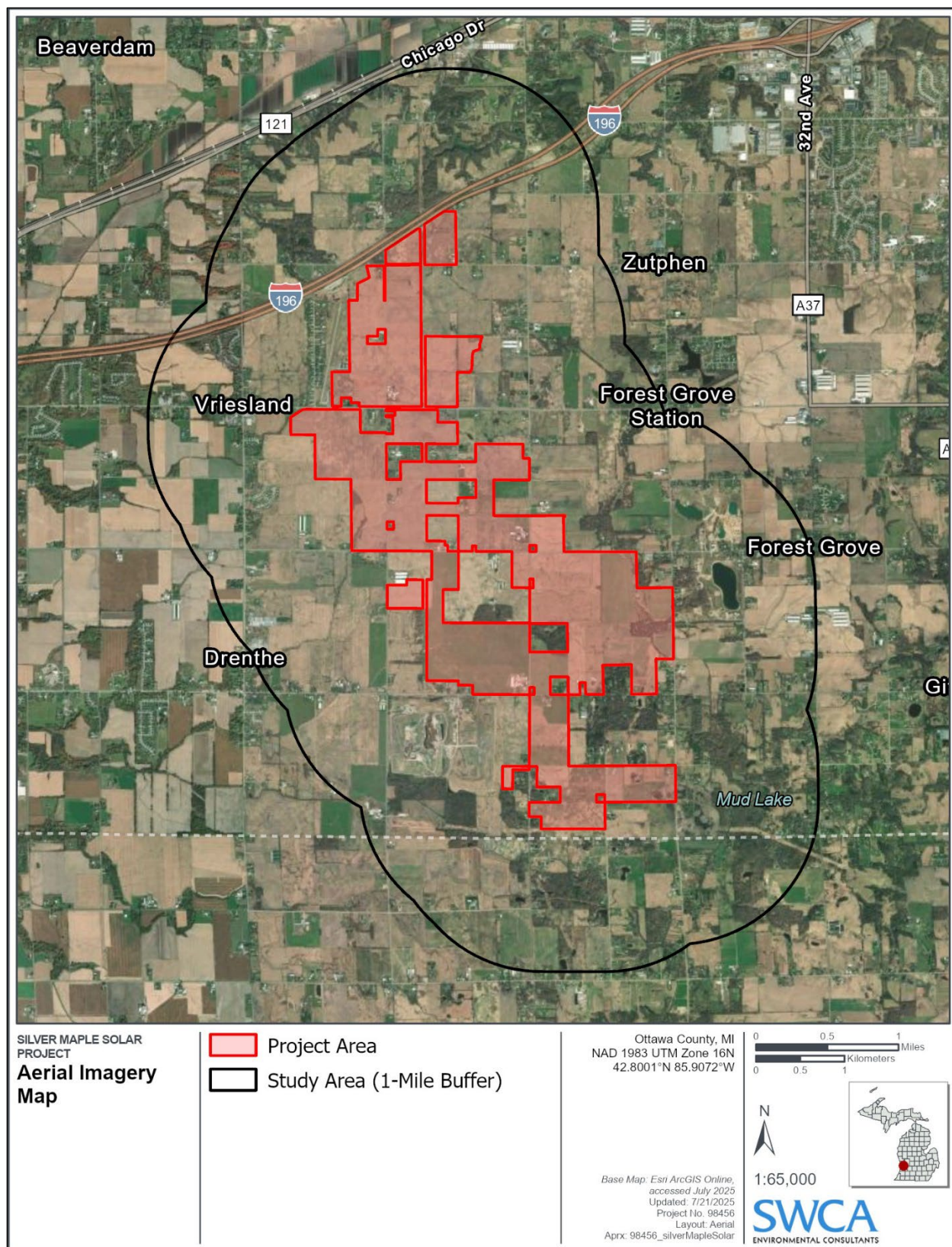


Figure A-3. Overview of the study area for the proposed Silver Maple Solar Project on aerial imagery.

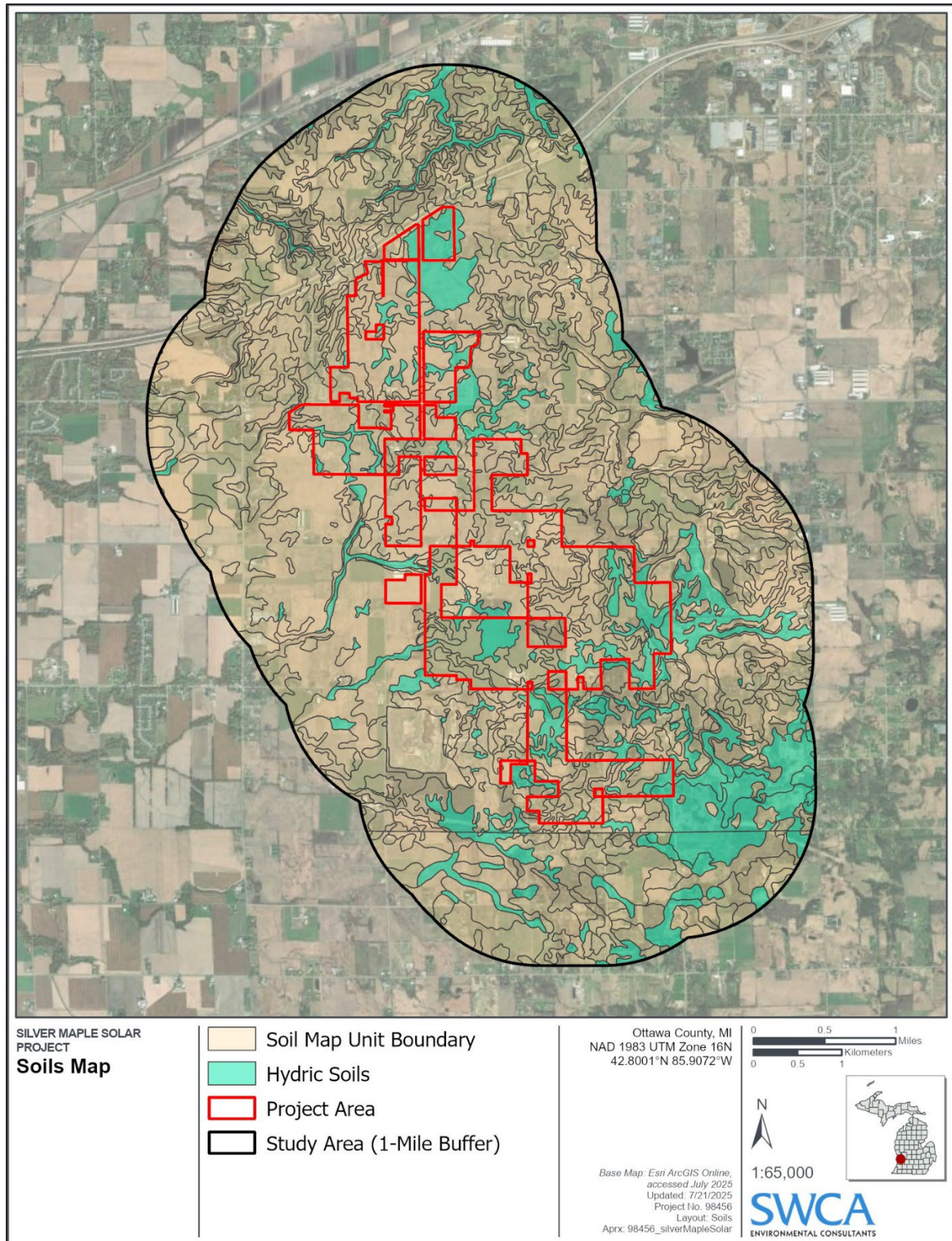


Figure A-4. Soils within the study area.

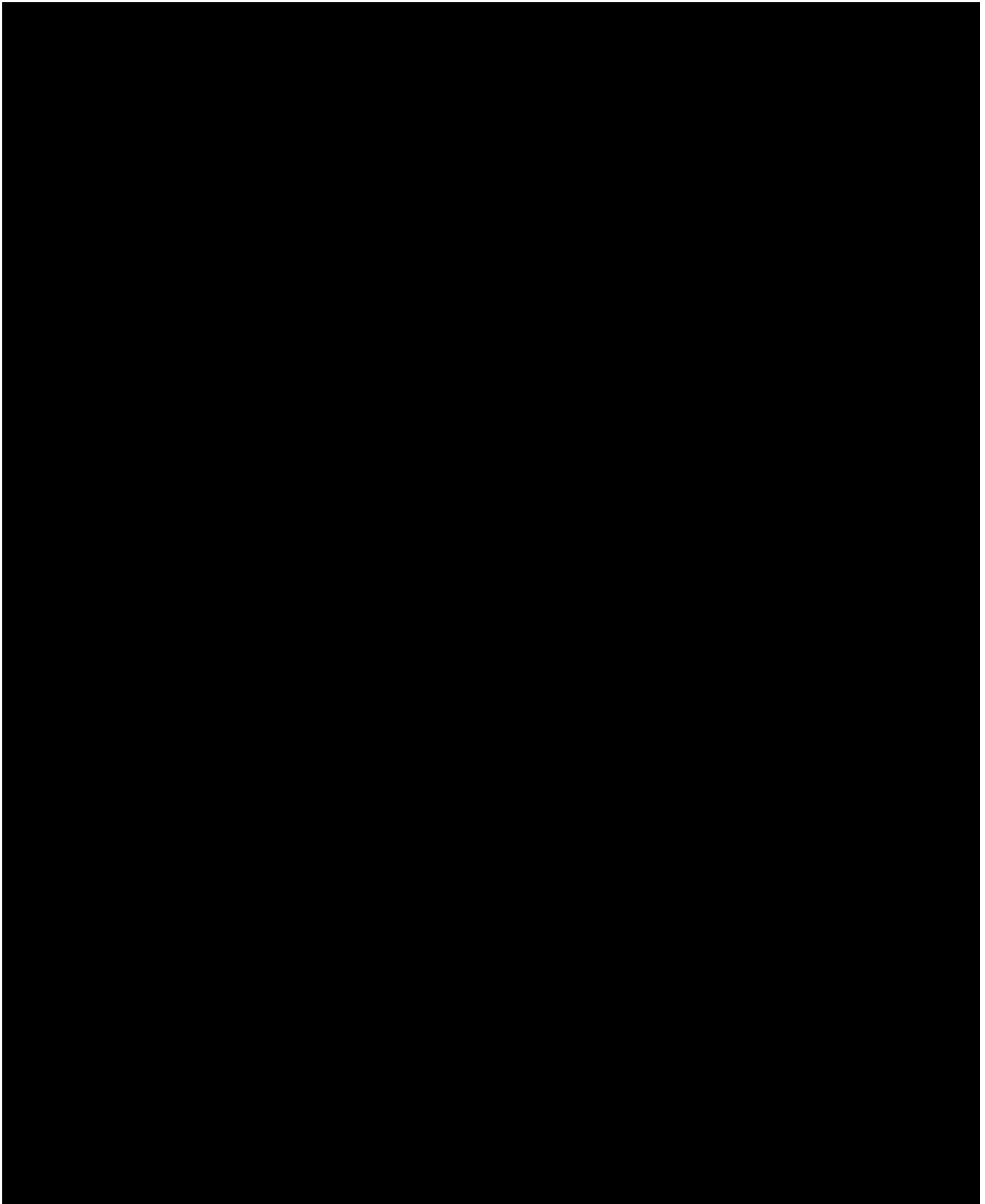


Figure A-5. Results of the background research for previously recorded cultural resources and previously conducted surveys.



Silver Maple Solar Project, Ottawa County, Michigan

Exhibit A-5: NFPA Compliance

Michigan Public Service Commission Requirements

APRIL 2026

The proposed Project is not an energy storage facility
and thus the standards in Exhibit A-5 do not apply.

PREPARED FOR

Silver Maple PV, LLC

353 North Clark Street, 30th Floor
Chicago, Illinois 60654

PREPARED BY

SWCA Environmental Consultants

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Lombard, Illinois 60148



Silver Maple Solar Project, Ottawa County, Michigan

Exhibit A-6.1: Environmental Compliance – Soil and Economic Survey Report

Michigan Public Service Commission Requirements

APRIL 2026

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EXHIBIT A-6.1: ENVIRONMENTAL COMPLIANCE – SOIL AND ECONOMIC SURVEY REPORT

(a) Exhibits A-6.1 through A-6.4 are designed to demonstrate compliance with applicable state and federal environmental laws. Below is a list of the sub exhibits.

1. Exhibit A-6.1: Soil and Economic Survey Report.

Based on a review of the Ottawa County and U.S. Department of Agriculture (“USDA”) websites, a soil and economic survey report for the county was not available. Based on guidance obtained from Michigan Public Service Commission, the USDA Web Soil Survey was reviewed to assess the soil and economic qualities of the county and proposed Project Area. Silver Maple PV, LLC, provides with this Application as **Appendix I Exhibit A-6.1** seven Natural Resources Conservation Service Soil Reports for the Project: five reports cumulatively cover the entirety Ottawa County, one report covers the Project Area, and one report covers the Project Area with an additional 1,000-foot buffer. The attached reports identify prime and statewide important farmland soils within the Project boundary and buffer. See also **Appendix II, Exhibit 2**, Direct Testimony of C. Mcknight, at pp. 12-13.

Additionally, a summary of soil classifications and agricultural productivity indices, which is incorporated here by reference, is included in **Appendix I Exhibit A-9** (Farmland Protection) and demonstrates consistency with Public Act 233 requirements.



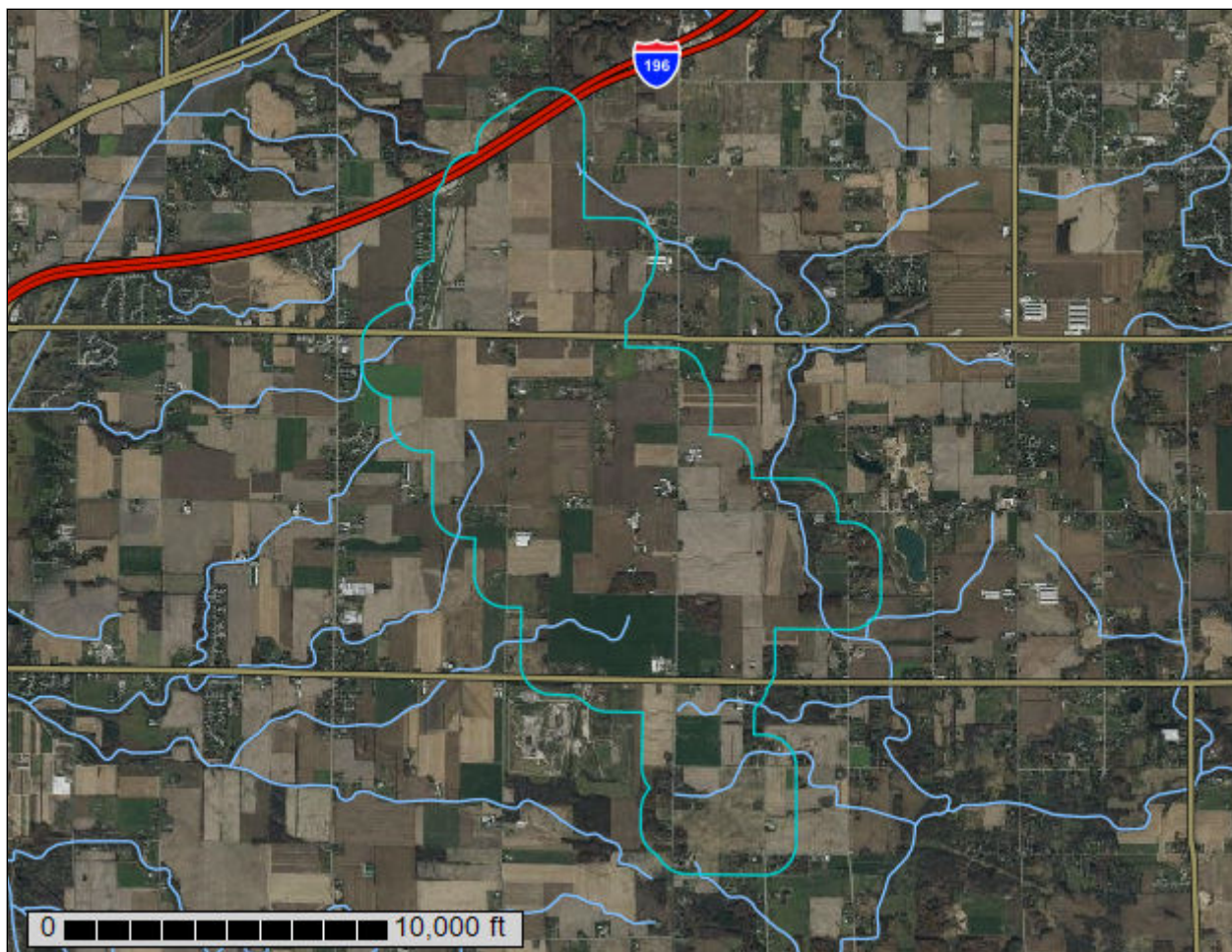
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Allegan County, Michigan, and Ottawa County, Michigan**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

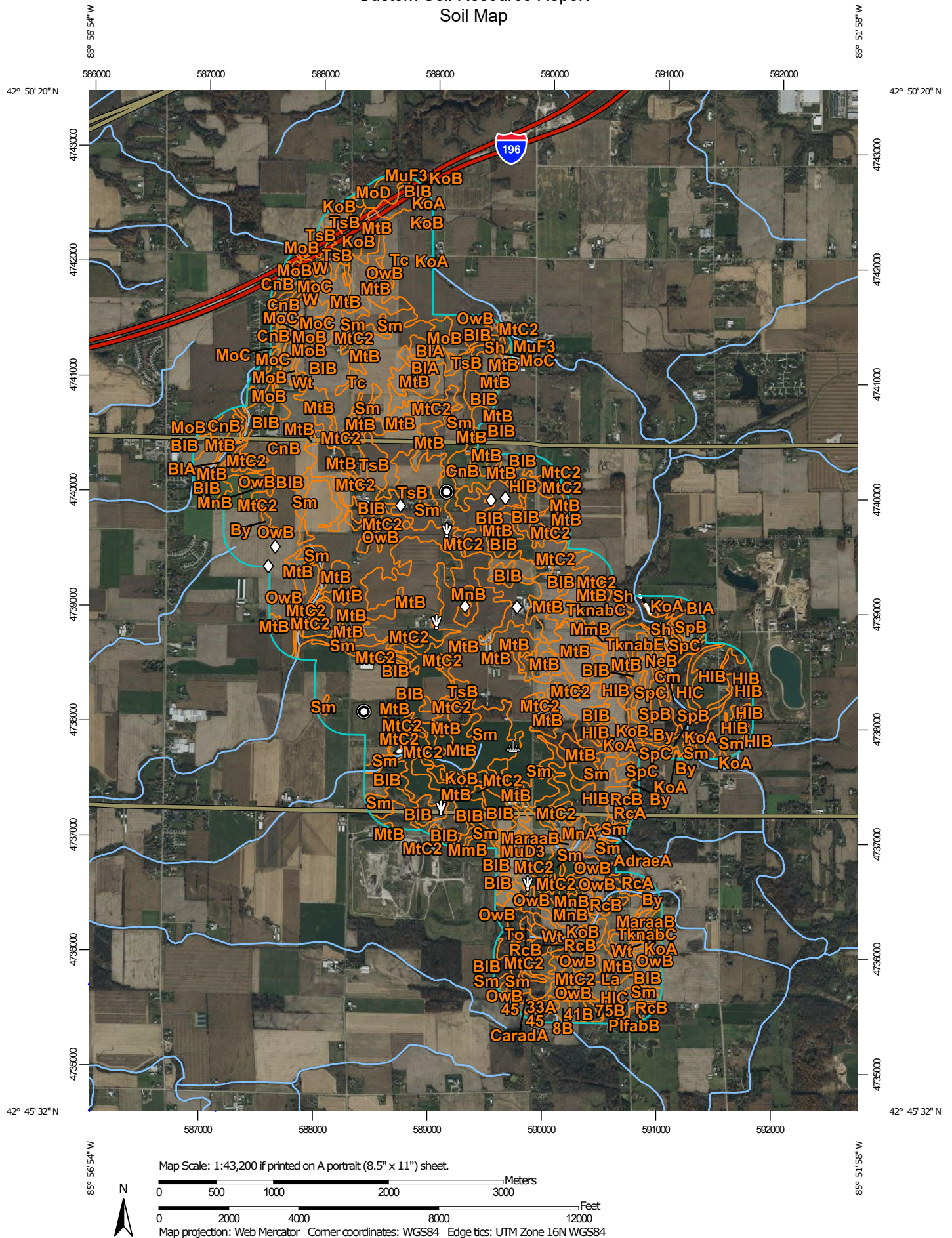
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Allegan County, Michigan

Survey Area Data: Version 23, Sep 2, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 4, 2022—Nov 7, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8B	Glynwood clay loam, 1 to 6 percent slopes	3.7	0.1%
19A	Brady sandy loam, 0 to 3 percent slopes	3.5	0.1%
31B	Tekenink loamy fine sand, 2 to 6 percent slopes	0.6	0.0%
31C	Tekenink loamy fine sand, 6 to 12 percent slopes	6.6	0.2%
33A	Kibbie fine sandy loam, 0 to 3 percent slopes	7.5	0.2%
41B	Blount silt loam, 1 to 4 percent slopes	19.2	0.5%
42B	Metamora sandy loam, 1 to 4 percent slopes	1.7	0.0%
44B	Chelsea loamy fine sand, 0 to 6 percent slopes	3.3	0.1%
45	Pewamo silt loam	0.2	0.0%
75B	Capac-Marlette loams, 1 to 6 percent slopes	5.4	0.1%
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	0.4	0.0%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	2.9	0.1%
Subtotals for Soil Survey Area		55.0	1.3%
Totals for Area of Interest		4,168.5	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	3.4	0.1%
BIA	Blount loam, 0 to 2 percent slopes	68.1	1.6%
BIB	Blount loam, 2 to 6 percent slopes	1,400.8	33.6%
By	Bruce loam	21.0	0.5%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	4.1	0.1%
Cm	Cohoctah loam	35.1	0.8%
CnB	Conover loam, 2 to 6 percent slopes	156.8	3.8%
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	91.7	2.2%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	36.8	0.9%
KnA	Kawkawlin loam, 0 to 2 percent slopes	4.5	0.1%
KoA	Kibbie loam, 0 to 2 percent slopes	39.8	1.0%
KoB	Kibbie loam, 2 to 6 percent slopes	135.7	3.3%
La	Lacota silt loam	2.5	0.1%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	18.6	0.4%
MmB	Menominee loamy sand, 2 to 6 percent slopes	2.5	0.1%
MnA	Metamora sandy loam, 0 to 2 percent slopes	3.1	0.1%
MnB	Metamora sandy loam, 2 to 6 percent slopes	60.3	1.4%
MoB	Wawasee loam, 2 to 6 percent slopes	60.0	1.4%
MoC	Wawasee loam, 6 to 12 percent slopes	39.1	0.9%
MoD	Miami loam, 12 to 18 percent slopes	2.2	0.1%
MtB	Morley loam, 2 to 6 percent slopes	683.1	16.4%
MtC2	Morley loam, 6 to 12 percent slopes, eroded	333.7	8.0%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	5.3	0.1%
MuF3	Morley clay loam, 25 to 45 percent slopes, severely eroded	2.1	0.0%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	3.1	0.1%
OsB	Oshtemo sandy loam, 2 to 6 percent slopes	5.4	0.1%
OwB	Owosso sandy loam, 2 to 6 percent slopes	86.4	2.1%
RcA	Richter sandy loam, 0 to 2 percent slopes	9.1	0.2%
RcB	Richter sandy loam, 2 to 6 percent slopes	32.0	0.8%
Sh	Shoals loam	37.0	0.9%
Sm	Sims loam	408.0	9.8%
SpB	Spinks loamy sand, 2 to 6 percent slopes	52.1	1.3%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SpC	Spinks loamy sand, 6 to 12 percent slopes	17.1	0.4%
Tc	Toledo silty clay loam	94.1	2.3%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	12.9	0.3%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	4.0	0.1%
To	Tonkey sandy loam	11.5	0.3%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	109.5	2.6%
W	Water	7.2	0.2%
Wt	Washtenaw loam	13.7	0.3%
Subtotals for Soil Survey Area		4,113.5	98.7%
Totals for Area of Interest		4,168.5	100.0%

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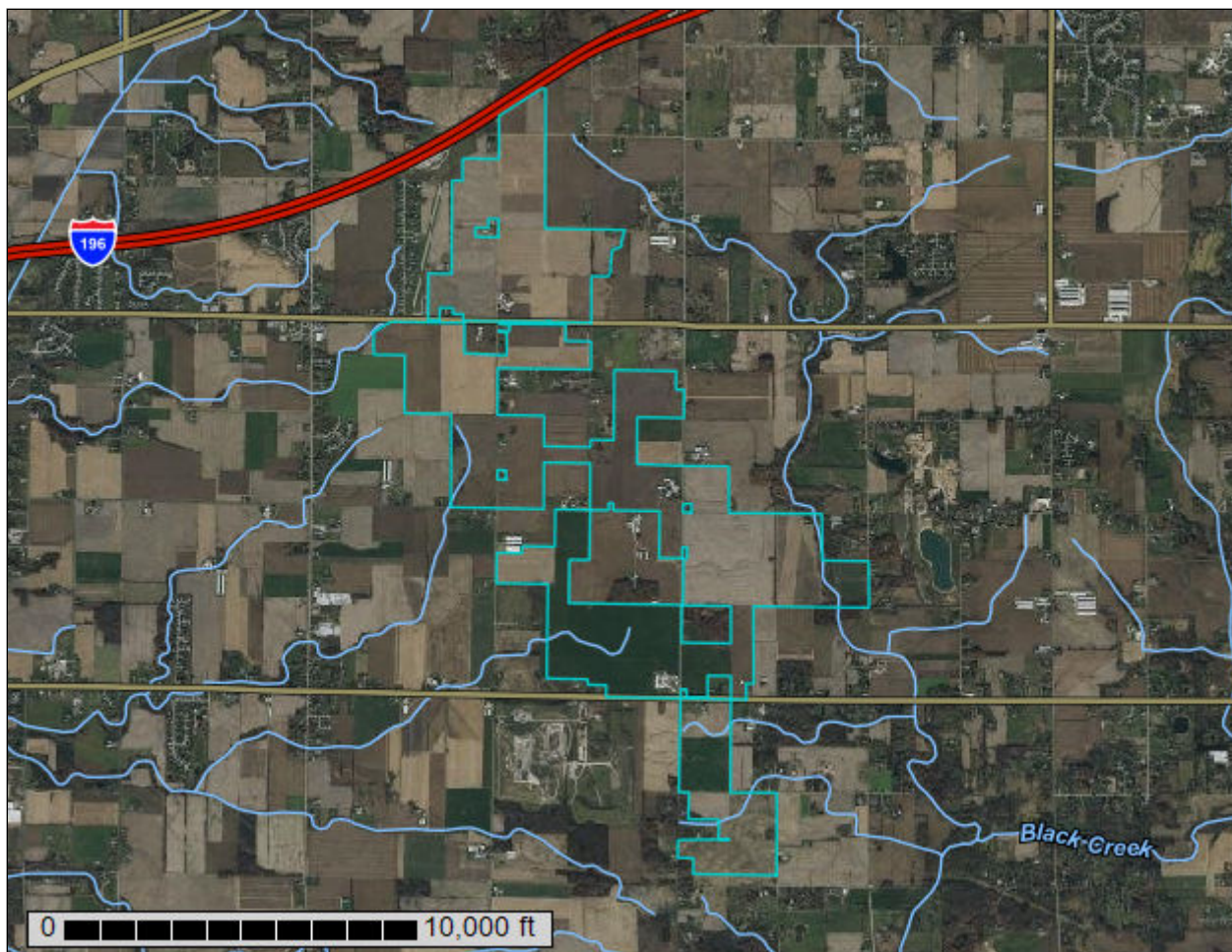
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Ottawa County, Michigan**



January 28, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map.....	9
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

85° 52' 10" W



0 1500 3000 6000 9000 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 4, 2022—Nov 7, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BIA	Blount loam, 0 to 2 percent slopes	48.7	2.5%
BIB	Blount loam, 2 to 6 percent slopes	671.8	35.0%
By	Bruce loam	2.3	0.1%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	0.0	0.0%
Cm	Cohoctah loam	22.4	1.2%
CnB	Conover loam, 2 to 6 percent slopes	68.5	3.6%
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	28.7	1.5%
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	10.4	0.5%
KoA	Kibbie loam, 0 to 2 percent slopes	7.3	0.4%
KoB	Kibbie loam, 2 to 6 percent slopes	60.5	3.2%
La	Lacota silt loam	2.5	0.1%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	5.2	0.3%
MmB	Menominee loamy sand, 2 to 6 percent slopes	1.5	0.1%
MnA	Metamora sandy loam, 0 to 2 percent slopes	2.1	0.1%
MnB	Metamora sandy loam, 2 to 6 percent slopes	45.5	2.4%
MoB	Wawasee loam, 2 to 6 percent slopes	3.5	0.2%
MoC	Wawasee loam, 6 to 12 percent slopes	18.0	0.9%
MtB	Morley loam, 2 to 6 percent slopes	420.8	22.0%
MtC2	Morley loam, 6 to 12 percent slopes, eroded	155.5	8.1%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	0.7	0.0%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	3.1	0.2%
OwB	Owosso sandy loam, 2 to 6 percent slopes	38.7	2.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RcA	Richter sandy loam, 0 to 2 percent slopes	0.2	0.0%
RcB	Richter sandy loam, 2 to 6 percent slopes	1.0	0.1%
Sh	Shoals loam	4.1	0.2%
Sm	Sims loam	202.7	10.6%
SpB	Spinks loamy sand, 2 to 6 percent slopes	18.7	1.0%
SpC	Spinks loamy sand, 6 to 12 percent slopes	2.6	0.1%
Tc	Toledo silty clay loam	23.3	1.2%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	3.0	0.2%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	41.4	2.2%
Wt	Washtenaw loam	2.2	0.1%
Totals for Area of Interest		1,916.7	100.0%

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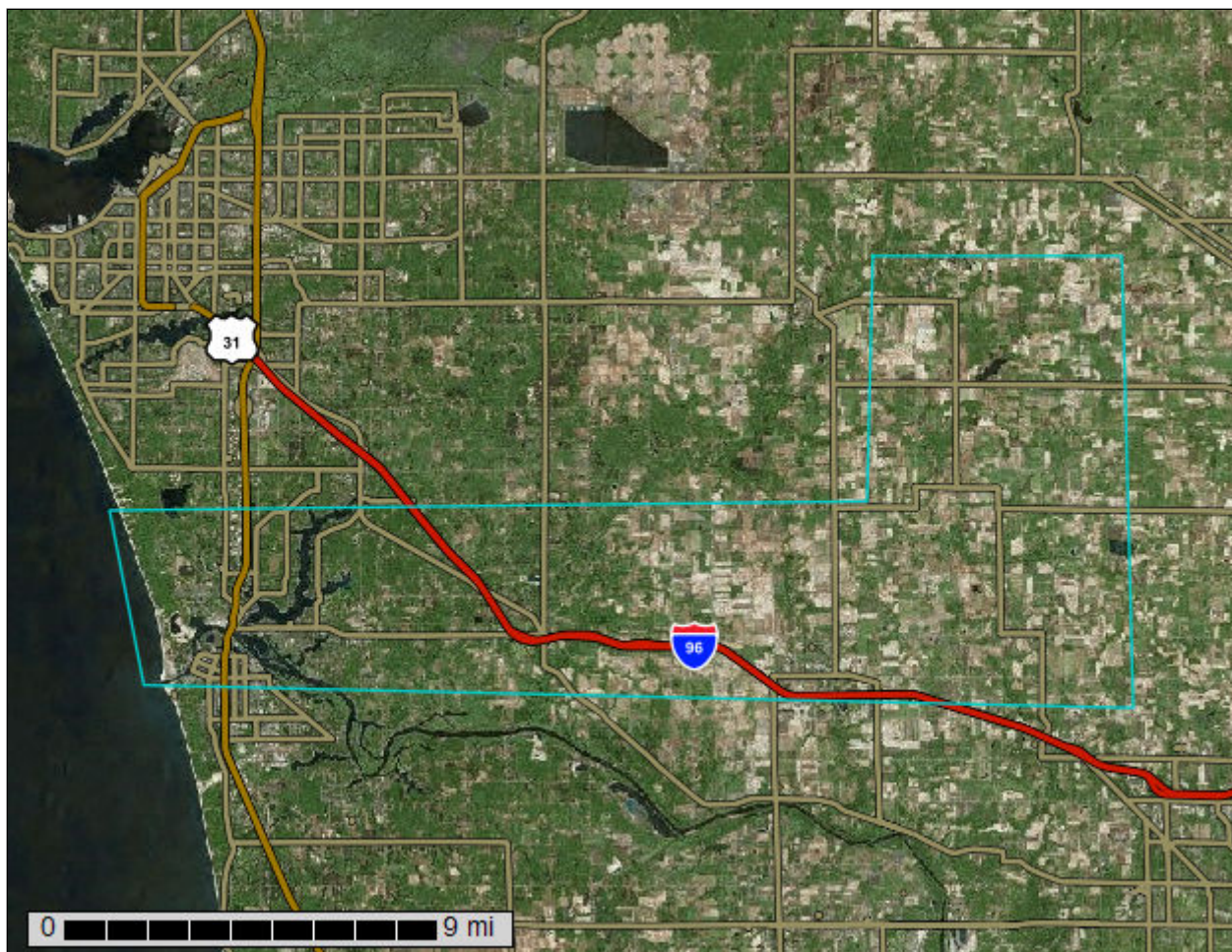
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NRCS

Natural
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Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Kent County, Michigan, Muskegon County, Michigan, and Ottawa County, Michigan



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

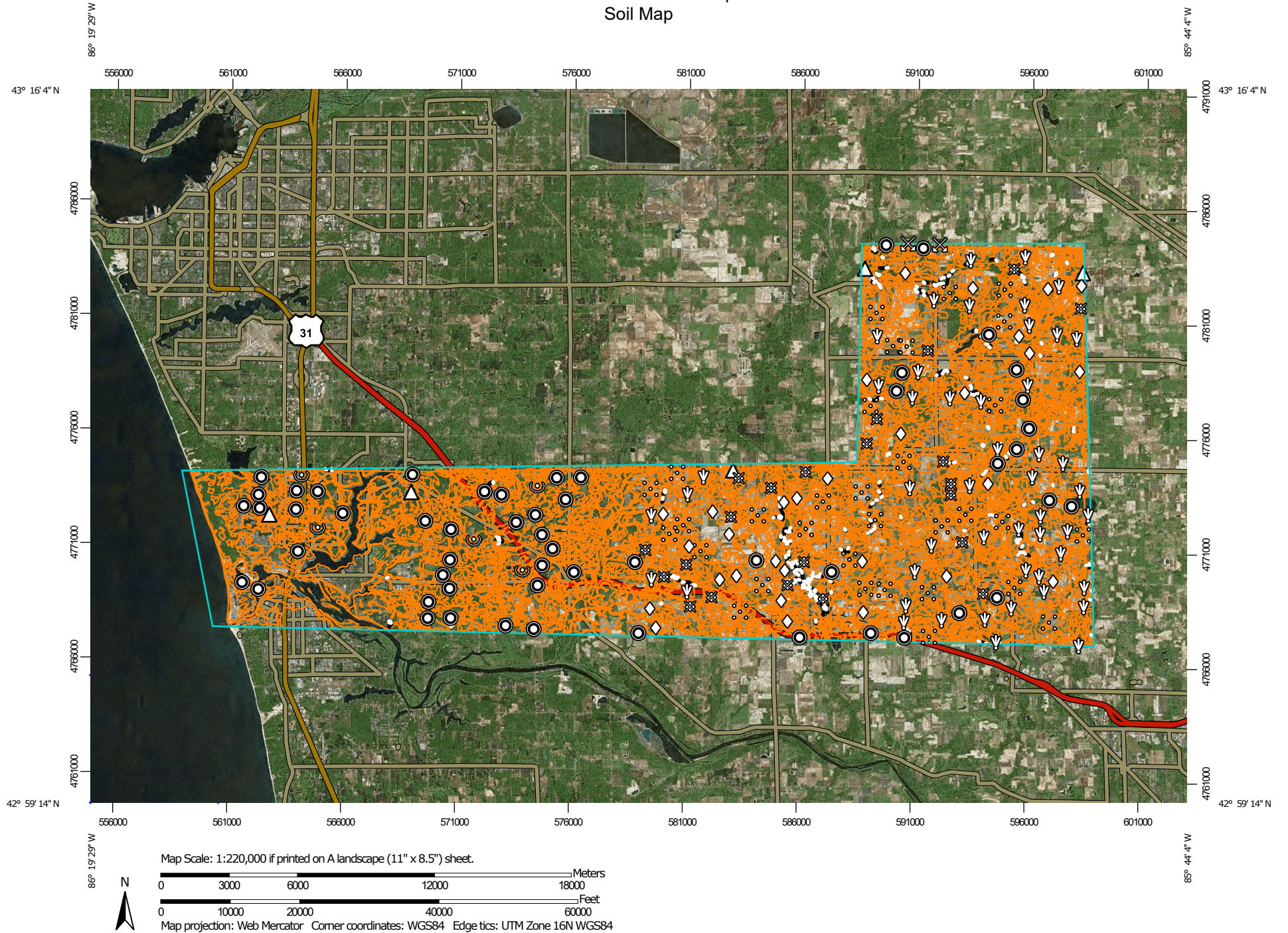
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kent County, Michigan

Survey Area Data: Version 24, Sep 4, 2025

Soil Survey Area: Muskegon County, Michigan

Survey Area Data: Version 21, Sep 4, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Glendora loamy sand	0.6	0.0%
7	Cohoctah loam	19.2	0.0%
9B	Rimer loamy fine sand, 0 to 4 percent slopes	1.5	0.0%
11B	Owosso-Marlette sandy loams, 2 to 6 percent slopes	7.0	0.0%
11C	Owosso-Marlette sandy loams, 6 to 12 percent slopes	3.0	0.0%
13A	Metamora sandy loam, 0 to 3 percent slopes	18.1	0.0%
15	Sloan loam	38.5	0.0%
16	Ceresco loam	2.6	0.0%
17E	Chelsea loamy fine sand, 18 to 45 percent slopes	3.5	0.0%
23A	Thetford loamy sand, 0 to 3 percent slopes	4.7	0.0%
28	Gilford fine sandy loam, 0 to 2 percent slopes, gravelly subsoil	1.8	0.0%
30C	Spinks loamy sand, 6 to 12 percent slopes	1.7	0.0%
31	Wallkill silt loam	3.3	0.0%
36B	Filer loam, 2 to 6 percent slopes	4.8	0.0%
36C	Filer loam, 6 to 12 percent slopes	5.4	0.0%
36D	Filer loam, 12 to 18 percent slopes	4.9	0.0%
37B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	34.4	0.0%
38	Parkhill loam, non dense till subsoil, 0 to 2 percent slopes	6.0	0.0%
41B	Kibbie loam, 0 to 4 percent slopes	13.7	0.0%
43	Granby loamy fine sand, 0 to 2 percent slopes	1.3	0.0%
45B	Onkama loam, Lake Michigan Lobe, 2 to 6 percent slopes	203.9	0.2%
45C	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	149.5	0.2%
45D	Perrinton loam, 12 to 18 percent slopes	10.5	0.0%
45E	Perrinton loam, 18 to 25 percent slopes	5.0	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
46B	Ithaca loam, 1 to 6 percent slopes	215.9	0.2%
47	Pewamo loam	108.6	0.1%
49B	Selfridge loamy sand, 0 to 4 percent slopes	1.1	0.0%
56B	Scalley sandy loam, 2 to 6 percent slopes	3.3	0.0%
69	Colwood silt loam	3.0	0.0%
75	Udorthents, loamy	2.2	0.0%
83B	Marlette loam, 2 to 6 percent slopes	14.9	0.0%
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	8.9	0.0%
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	14.0	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	3.1	0.0%
W	Water	37.5	0.0%
Subtotals for Soil Survey Area		957.3	1.0%
Totals for Area of Interest		96,069.6	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaB	Belding and Allendale soils, 0 to 6 percent slopes	176.7	0.2%
BbB	Belding-Ubly sandy loams, 2 to 6 percent slopes	25.5	0.0%
CIC	Chelsea-Mancelona loamy sands, 6 to 12 percent slopes, lake moderated	23.1	0.0%
ClmaabB	Coloma-Brems-Fern complex, 0 to 6 percent slopes	38.0	0.0%
CmB	Chelsea-Mancelona loamy sands, 2 to 6 percent slopes	6.4	0.0%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	81.2	0.1%
Ds	Deford fine sand	3.8	0.0%
Ga	Granby loamy sand, lake plain, 0 to 2 percent slopes	19.7	0.0%
Hp	Hettinger and Pickford soils	1.4	0.0%
KaB	Kalkaska-Wallace sands, 2 to 6 percent slopes	3.1	0.0%
KkA	Kawkawlin loam, 0 to 2 percent slopes	4.8	0.0%
KkB	Kawkawlin loam, 2 to 6 percent slopes	35.2	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KsB	Kawkawlin and Selkirk loams, 2 to 6 percent slopes	12.7	0.0%
KtE	Kent silt loam, 25 to 45 percent slopes	35.4	0.0%
Ma	Marsh	0.6	0.0%
MeB	Menominee and Ubly soils, 2 to 6 percent slopes	25.3	0.0%
MeC	Menominee and Ubly soils, 6 to 12 percent slopes	1.5	0.0%
NeB	Onekama loam, Lake Michigan Lobe, 2 to 6 percent slopes	227.5	0.2%
NeC	Onekama loam, Lake Michigan Lobe, 6 to 12 percent slopes	18.3	0.0%
NID	Nester soils, 12 to 25 percent slopes, lake moderated	8.6	0.0%
NrC	Nester sandy loam, 6 to 12 percent slopes	49.1	0.1%
NsD3	Nester soils, 12 to 25 percent slopes, severely eroded	6.6	0.0%
NsE	Nester soils, 25 to 45 percent slopes	0.0	0.0%
NsE3	Nester soils, 25 to 45 percent slopes, severely eroded	9.8	0.0%
NtB	Nester-Kawkawlin loams, 2 to 6 percent slopes	52.3	0.1%
NuB	Nester-Ubly sandy loams, 2 to 6 percent slopes	298.7	0.3%
PG	Pits, gravel	20.5	0.0%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	152.3	0.2%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	3.4	0.0%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	13.5	0.0%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	8.1	0.0%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	0.6	0.0%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	103.2	0.1%
Ra	Roscommon and Au Gres sands	161.4	0.2%
Sa	Saranac loam	32.6	0.0%
Sm	Sims loam	51.8	0.1%
SnkaaB	Spinks loamy sand, 0 to 6 percent slopes	34.7	0.0%
So	Sloan soils	73.9	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Tc	Tawas and Carlisle mucks	31.3	0.0%
Td	Tonkey and Deford soils	115.0	0.1%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	4.1	0.0%
Ud	Udipsamments, nearly level and gently undulating	1.4	0.0%
W	Water	36.9	0.0%
Wa	Warners muck	1.8	0.0%
We	Wind eroded land, sloping	11.4	0.0%
Subtotals for Soil Survey Area		2,022.9	2.1%
Totals for Area of Interest		96,069.6	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	335.2	0.3%
Ak	Algansee loamy sand	3.3	0.0%
AIA	Allendale sandy loam, 0 to 4 percent slopes	1,887.5	2.0%
ArB	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes	260.6	0.3%
BeA	Belding sandy loam, 0 to 2 percent slopes	699.5	0.7%
BeB	Belding sandy loam, 2 to 6 percent slopes	1,629.3	1.7%
BNL	Blownout land	23.5	0.0%
BpA	Bowers loam, 0 to 2 percent slopes	209.0	0.2%
BpB	Bowers loam, 2 to 6 percent slopes	1,991.9	2.1%
BrB	Boyer loamy sand, 2 to 6 percent slopes	9.7	0.0%
BrC	Boyer loamy sand, 6 to 12 percent slopes	4.8	0.0%
BrmaaA	Brems-Spinks complex, 0 to 2 percent slopes	495.9	0.5%
Bu	Breckenridge sandy loam	143.4	0.1%
Bv	Brevort sandy loam	53.4	0.1%
By	Bruce loam	210.8	0.2%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	496.8	0.5%
Ce	Ceresco loam	853.2	0.9%
ChB	Coloma loamy sand, 0 to 6 percent slopes	918.9	1.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChC	Coloma loamy sand, 6 to 12 percent slopes	52.4	0.1%
CIB	Chelsea complex, 0 to 6 percent slopes	406.5	0.4%
Cm	Cohoctah loam	993.2	1.0%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	3,114.8	3.2%
CrB	Croswell sand, 0 to 6 percent slopes	634.9	0.7%
DNL	Dune land	474.3	0.5%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	28.2	0.0%
FoB	Fox sandy loam, 0 to 6 percent slopes	4.9	0.0%
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil	298.9	0.3%
GeA	Gladwin sandy loam, 0 to 2 percent slopes	632.3	0.7%
GeB	Gladwin sandy loam, 2 to 6 percent slopes	183.8	0.2%
Gl	Glendora sandy loam	689.4	0.7%
Gm	Granby loamy sand, lake plain, 0 to 2 percent slopes	4,458.4	4.6%
Gn	Granby fine sandy loam, lake plain, 0 to 2 percent slopes	621.0	0.6%
Gr	Gravel pits	134.1	0.1%
Hg	Hettinger loam	1,126.1	1.2%
HgtafA	Houghton-Adrian mucks, lake moderated, 0 to 1 percent slopes	926.1	1.0%
IoA	Iosco loamy sand, 0 to 4 percent slopes	2,068.0	2.2%
IrA	Iosco and Allendale loamy sands, 0 to 4 percent slopes	2,019.1	2.1%
IsB	Iosco-Belding complex, 2 to 6 percent slopes	163.6	0.2%
KaC	Kalkaska sand, 0 to 12 percent slopes	194.6	0.2%
KnA	Kawkawlin loam, 0 to 2 percent slopes	1,997.5	2.1%
KnB	Kawkawlin loam, 2 to 6 percent slopes	8,187.1	8.5%
KoA	Kibbie loam, 0 to 2 percent slopes	330.1	0.3%
KoB	Kibbie loam, 2 to 6 percent slopes	250.9	0.3%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
La	Lacota silt loam	532.1	0.6%
Lb	Lake beaches	83.5	0.1%
Ls	Linwood muck	6.0	0.0%
Ma	Made land	483.5	0.5%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	1,004.6	1.0%
McA	Mancelona loamy sand, 0 to 2 percent slopes	275.5	0.3%
McB	Mancelona loamy sand, 2 to 6 percent slopes	275.6	0.3%
McC	Mancelona loamy sand, 6 to 12 percent slopes	85.3	0.1%
Me	Marsh	116.9	0.1%
MhA	Matherton loam, 0 to 2 percent slopes	919.2	1.0%
MmB	Menominee loamy sand, 2 to 6 percent slopes	805.6	0.8%
MmC	Menominee loamy sand, 6 to 12 percent slopes	122.6	0.1%
MnA	Metamora sandy loam, 0 to 2 percent slopes	37.7	0.0%
MnB	Metamora sandy loam, 2 to 6 percent slopes	5.6	0.0%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	10,754.6	11.2%
NeC	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	4,368.7	4.5%
NeD	Nester loam, 12 to 18 percent slopes	329.2	0.3%
NeE	Nester loam, 18 to 25 percent slopes	282.4	0.3%
NeF	Nester loam, 25 to 45 percent slopes	1,116.2	1.2%
NsC3	Nester clay loam, 6 to 12 percent slopes, severely eroded	429.7	0.4%
NsD3	Nester clay loam, 12 to 18 percent slopes, severely eroded	625.6	0.7%
NsE3	Nester clay loam, 18 to 25 percent slopes, severely eroded	84.0	0.1%
NsF3	Nester clay loam, 25 to 45 percent slopes, severely eroded	481.8	0.5%
NwB	Newaygo sandy loam, 0 to 6 percent slopes	38.4	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	3,441.2	3.6%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	1,822.4	1.9%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	103.7	0.1%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	238.3	0.2%
PlfacD	Plainfield sand, dunes, 6 to 18 percent slopes	781.4	0.8%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	1,309.2	1.4%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	31.1	0.0%
Pn	Pinconning loamy sand	182.9	0.2%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	4,305.7	4.5%
PpsahB	Pipestone loamy sand, lake moderated, 0 to 4 percent slopes	143.5	0.1%
Pr	Pinconning and Breckenridge sandy loams	232.4	0.2%
RcA	Richter sandy loam, 0 to 2 percent slopes	1,729.7	1.8%
RcB	Richter sandy loam, 2 to 6 percent slopes	854.7	0.9%
Sd	Sand pits	140.1	0.1%
SeA	Selkirk loam, 0 to 2 percent slopes	236.4	0.2%
SeB	Selkirk loam, 2 to 6 percent slopes	761.5	0.8%
Sh	Shoals loam	668.8	0.7%
Sl	Sewage lagoons	14.9	0.0%
Sm	Sims loam	1,638.4	1.7%
Sn	Sloan loam	828.5	0.9%
SnkabB	Spinks-Fern complex, 2 to 6 percent slopes	839.4	0.9%
Tc	Toledo silty clay loam	249.4	0.3%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	752.9	0.8%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	92.8	0.1%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	14.2	0.0%
To	Tonkey sandy loam	1,309.1	1.4%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	5.6	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UIA	Ubly sandy loam, 0 to 2 percent slopes	65.0	0.1%
UIB	Ubly sandy loam, 2 to 6 percent slopes	1,518.3	1.6%
UIC	Ubly sandy loam, 6 to 12 percent slopes	225.0	0.2%
W	Water	2,992.0	3.1%
Wa	Walkill silt loam	138.2	0.1%
Wm	Warners muck	72.4	0.1%
Wt	Washtenaw loam	426.0	0.4%
WuC	Wind eroded land, sloping	88.3	0.1%
Subtotals for Soil Survey Area		91,735.1	95.5%
Totals for Area of Interest		96,069.6	100.0%

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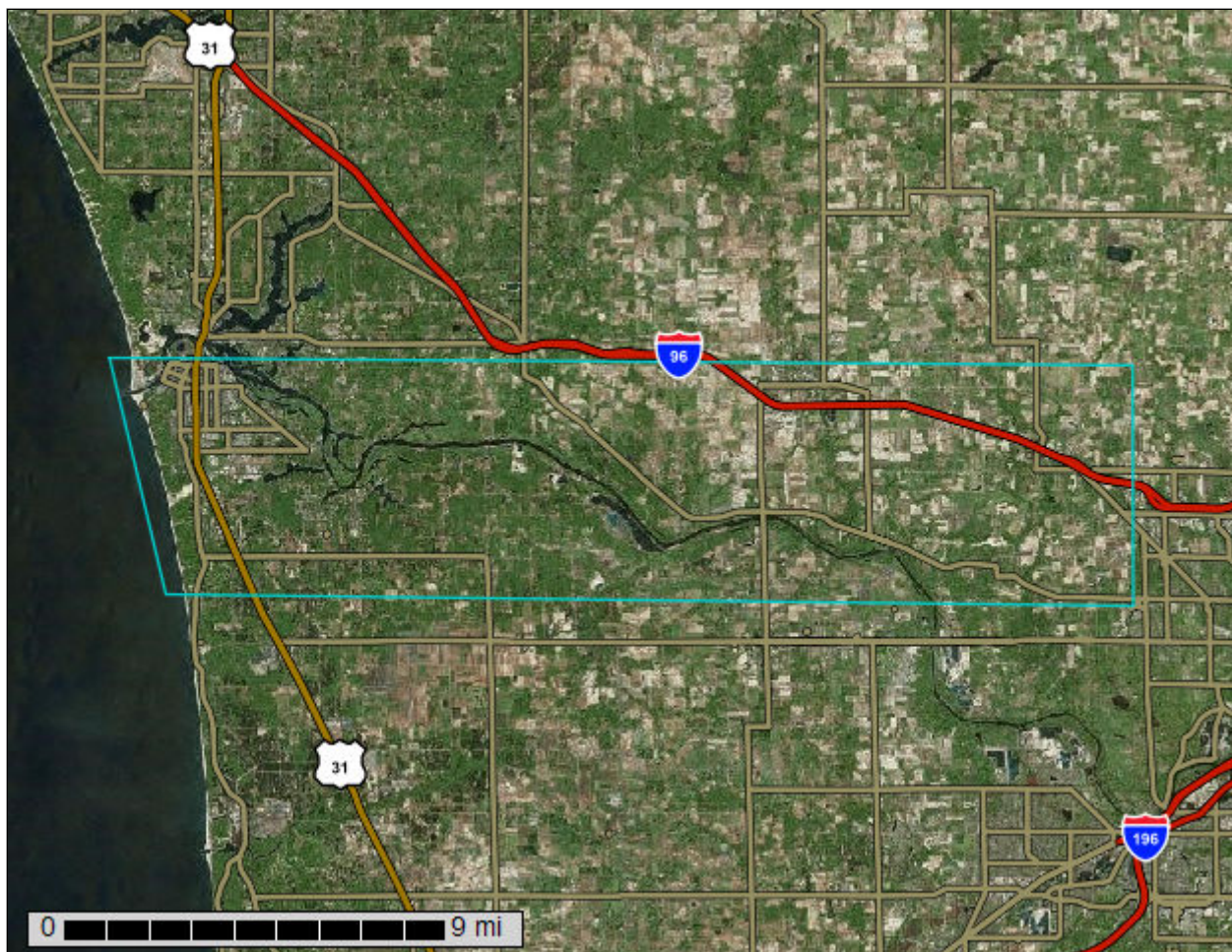
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Kent County, Michigan, and Ottawa County, Michigan



January 27, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

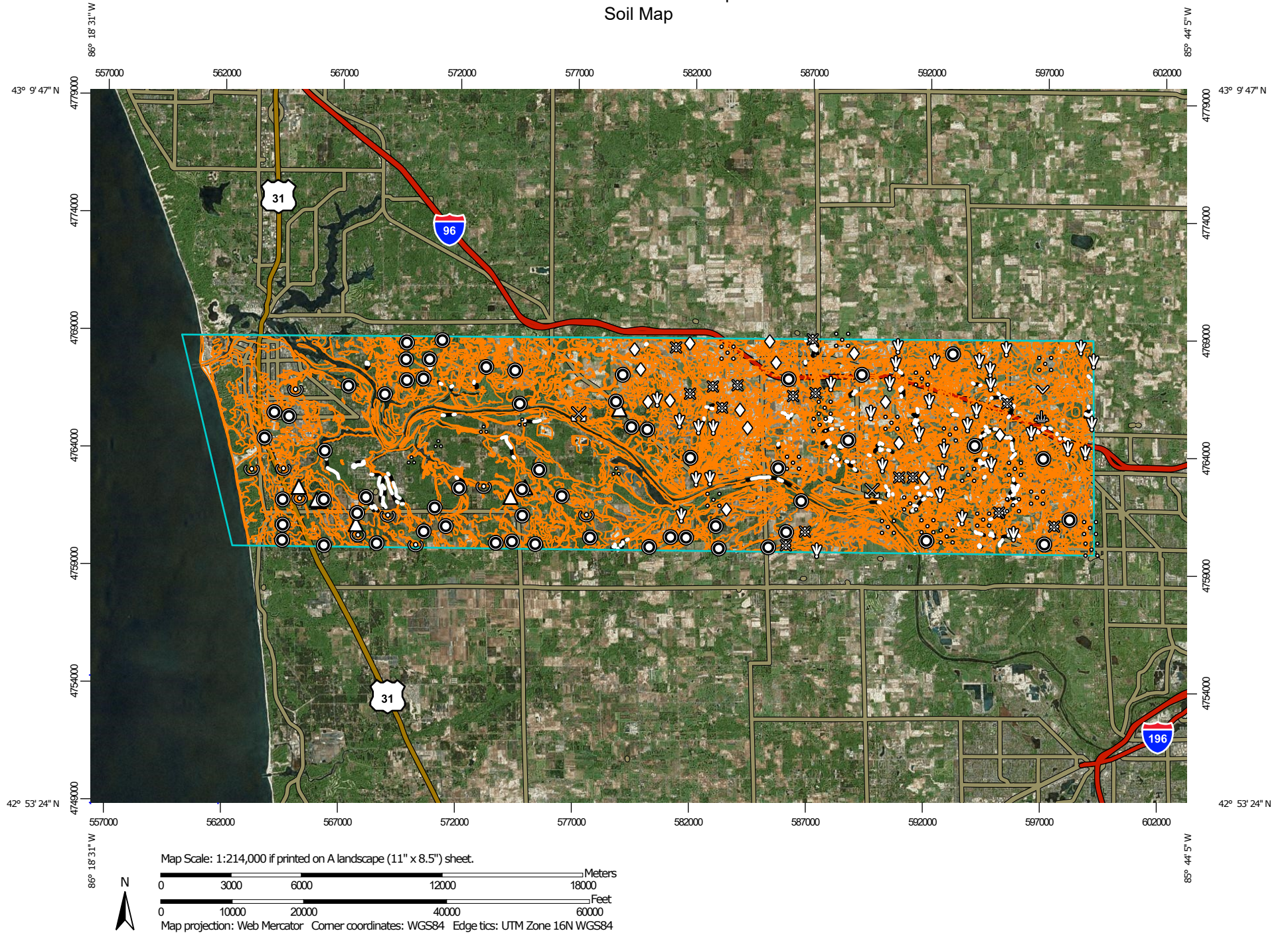
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kent County, Michigan

Survey Area Data: Version 24, Sep 4, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Glendora loamy sand	17.5	0.0%
7	Cohoctah loam	12.8	0.0%
9B	Rimer loamy fine sand, 0 to 4 percent slopes	4.7	0.0%
13A	Metamora sandy loam, 0 to 3 percent slopes	44.8	0.1%
18B	Glynwood loam, 2 to 6 percent slopes	14.7	0.0%
18C	Glynwood loam, 6 to 12 percent slopes	0.6	0.0%
23A	Thetford loamy sand, 0 to 3 percent slopes	22.4	0.0%
27B	Wasepi loamy sand, 0 to 4 percent slopes	1.2	0.0%
30B	Spinks loamy sand, 0 to 6 percent slopes	11.6	0.0%
31	Wallkill silt loam	2.5	0.0%
36B	Filer loam, 2 to 6 percent slopes	36.0	0.0%
36C	Filer loam, 6 to 12 percent slopes	39.2	0.0%
37B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	72.0	0.1%
38	Parkhill loam, non dense till subsoil, 0 to 2 percent slopes	9.8	0.0%
41B	Kibbie loam, 0 to 4 percent slopes	9.2	0.0%
45B	Onkama loam, Lake Michigan Lobe, 2 to 6 percent slopes	119.4	0.1%
45C	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	145.2	0.2%
45D	Perrinton loam, 12 to 18 percent slopes	21.1	0.0%
46B	Ithaca loam, 1 to 6 percent slopes	108.6	0.1%
47	Pewamo loam	58.8	0.1%
48B	Metea loamy sand, 2 to 6 percent slopes	4.7	0.0%
49B	Selfridge loamy sand, 0 to 4 percent slopes	32.2	0.0%
52	Belleville loamy sand	16.7	0.0%
56B	Scalley sandy loam, 2 to 6 percent slopes	7.3	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
66B	Boyer loamy sand, 0 to 6 percent slopes	3.1	0.0%
69	Colwood silt loam	8.5	0.0%
83B	Marlette loam, 2 to 6 percent slopes	5.7	0.0%
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	11.1	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	0.5	0.0%
W	Water	4.0	0.0%
Subtotals for Soil Survey Area		846.0	1.0%
Totals for Area of Interest		84,750.9	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	599.9	0.7%
Ak	Algonsee loamy sand	316.6	0.4%
AIA	Allendale sandy loam, 0 to 4 percent slopes	2,056.4	2.4%
ArB	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes	596.6	0.7%
BeA	Belding sandy loam, 0 to 2 percent slopes	484.5	0.6%
BeB	Belding sandy loam, 2 to 6 percent slopes	580.5	0.7%
BIA	Blount loam, 0 to 2 percent slopes	28.0	0.0%
BIB	Blount loam, 2 to 6 percent slopes	3.2	0.0%
BNL	Blownout land	68.4	0.1%
BpA	Bowers loam, 0 to 2 percent slopes	50.2	0.1%
BpB	Bowers loam, 2 to 6 percent slopes	2,023.4	2.4%
BrC	Boyer loamy sand, 6 to 12 percent slopes	1.2	0.0%
BrmaaA	Brems-Spinks complex, 0 to 2 percent slopes	372.2	0.4%
Bu	Breckenridge sandy loam	128.5	0.2%
Bv	Brevort sandy loam	372.3	0.4%
By	Bruce loam	83.2	0.1%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	366.4	0.4%
Ce	Ceresco loam	314.3	0.4%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChB	Coloma loamy sand, 0 to 6 percent slopes	1,206.7	1.4%
ChC	Coloma loamy sand, 6 to 12 percent slopes	29.5	0.0%
CIB	Chelsea complex, 0 to 6 percent slopes	897.1	1.1%
Cm	Cohoctah loam	844.9	1.0%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	2,401.0	2.8%
CrB	Croswell sand, 0 to 6 percent slopes	1,092.8	1.3%
DNL	Dune land	396.0	0.5%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	31.1	0.0%
FoB	Fox sandy loam, 0 to 6 percent slopes	5.4	0.0%
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil	365.7	0.4%
GeA	Gladwin sandy loam, 0 to 2 percent slopes	362.6	0.4%
GeB	Gladwin sandy loam, 2 to 6 percent slopes	79.9	0.1%
Gl	Glendora sandy loam	735.0	0.9%
Gm	Granby loamy sand, lake plain, 0 to 2 percent slopes	5,251.4	6.2%
Gn	Granby fine sandy loam, lake plain, 0 to 2 percent slopes	776.9	0.9%
Gr	Gravel pits	566.2	0.7%
Hg	Hettinger loam	802.4	0.9%
HgtafA	Houghton-Adrian mucks, lake moderated, 0 to 1 percent slopes	1,794.8	2.1%
IoA	Iosco loamy sand, 0 to 4 percent slopes	977.2	1.2%
IrA	Iosco and Allendale loamy sands, 0 to 4 percent slopes	1,279.4	1.5%
IsB	Iosco-Belding complex, 2 to 6 percent slopes	112.5	0.1%
KaC	Kalkaska sand, 0 to 12 percent slopes	24.4	0.0%
KnA	Kawkawlin loam, 0 to 2 percent slopes	1,518.9	1.8%
KnB	Kawkawlin loam, 2 to 6 percent slopes	2,176.9	2.6%
KoA	Kibbie loam, 0 to 2 percent slopes	140.9	0.2%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KoB	Kibbie loam, 2 to 6 percent slopes	312.1	0.4%
La	Lacota silt loam	90.5	0.1%
Lb	Lake beaches	106.9	0.1%
Ls	Linwood muck	10.3	0.0%
Ma	Made land	274.7	0.3%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	414.4	0.5%
McA	Mancelona loamy sand, 0 to 2 percent slopes	861.4	1.0%
McB	Mancelona loamy sand, 2 to 6 percent slopes	812.8	1.0%
McC	Mancelona loamy sand, 6 to 12 percent slopes	90.8	0.1%
Me	Marsh	477.8	0.6%
MhA	Matherton loam, 0 to 2 percent slopes	134.8	0.2%
MmB	Menominee loamy sand, 2 to 6 percent slopes	502.0	0.6%
MmC	Menominee loamy sand, 6 to 12 percent slopes	134.3	0.2%
MtB	Morley loam, 2 to 6 percent slopes	1.6	0.0%
MtE2	Morley loam, 18 to 25 percent slopes, eroded	2.3	0.0%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	3.7	0.0%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	6,488.0	7.7%
NeC	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	2,273.9	2.7%
NeD	Nester loam, 12 to 18 percent slopes	235.5	0.3%
NeE	Nester loam, 18 to 25 percent slopes	412.6	0.5%
NeF	Nester loam, 25 to 45 percent slopes	1,132.9	1.3%
NsC3	Nester clay loam, 6 to 12 percent slopes, severely eroded	183.3	0.2%
NsD3	Nester clay loam, 12 to 18 percent slopes, severely eroded	105.7	0.1%
NsE3	Nester clay loam, 18 to 25 percent slopes, severely eroded	4.2	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
NsF3	Nester clay loam, 25 to 45 percent slopes, severely eroded	903.4	1.1%
NwB	Newaygo sandy loam, 0 to 6 percent slopes	294.2	0.3%
OsA	Oshtemo sandy loam, 0 to 2 percent slopes	205.9	0.2%
OsB	Oshtemo sandy loam, 2 to 6 percent slopes	146.5	0.2%
OsC	Oshtemo sandy loam, 6 to 12 percent slopes	8.3	0.0%
OsD	Oshtemo sandy loam, 12 to 18 percent slopes	4.0	0.0%
OwB	Owosso sandy loam, 2 to 6 percent slopes	34.5	0.0%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	11,396.3	13.4%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	1,728.0	2.0%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	145.9	0.2%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	158.7	0.2%
PlfacD	Plainfield sand, dunes, 6 to 18 percent slopes	818.1	1.0%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	1,354.5	1.6%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	79.7	0.1%
Pn	Pinconning loamy sand	162.4	0.2%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	2,693.4	3.2%
PpsahB	Pipestone loamy sand, lake moderated, 0 to 4 percent slopes	304.9	0.4%
Pr	Pinconning and Breckenridge sandy loams	125.2	0.1%
RcA	Richter sandy loam, 0 to 2 percent slopes	929.3	1.1%
RcB	Richter sandy loam, 2 to 6 percent slopes	410.0	0.5%
SeA	Selkirk loam, 0 to 2 percent slopes	207.0	0.2%
SeB	Selkirk loam, 2 to 6 percent slopes	2,245.5	2.6%
Sh	Shoals loam	613.8	0.7%
Sl	Sewage lagoons	46.0	0.1%
Sm	Sims loam	500.3	0.6%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Sn	Sloan loam	1,922.5	2.3%
SnkabB	Spinks-Fern complex, 2 to 6 percent slopes	790.3	0.9%
SpA	Spinks loamy sand, 0 to 2 percent slopes	1.6	0.0%
SpB	Spinks loamy sand, 2 to 6 percent slopes	5.4	0.0%
SpC	Spinks loamy sand, 6 to 12 percent slopes	13.8	0.0%
Tc	Toledo silty clay loam	352.2	0.4%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	260.0	0.3%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	147.4	0.2%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	19.7	0.0%
To	Tonkey sandy loam	198.0	0.2%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	28.1	0.0%
UdB	Udipsamments, nearly level and undulating	32.4	0.0%
UIA	Ubly sandy loam, 0 to 2 percent slopes	394.8	0.5%
UIB	Ubly sandy loam, 2 to 6 percent slopes	731.4	0.9%
UIC	Ubly sandy loam, 6 to 12 percent slopes	154.8	0.2%
W	Water	3,710.0	4.4%
Wa	Wallkill silt loam	107.3	0.1%
Wm	Warners muck	18.2	0.0%
WsA	Wasepi sandy loam, 0 to 2 percent slopes	2.3	0.0%
Wt	Washtenaw loam	202.0	0.2%
WuC	Wind eroded land, sloping	19.7	0.0%
Subtotals for Soil Survey Area		82,009.9	96.8%
Totals for Area of Interest		84,750.9	100.0%

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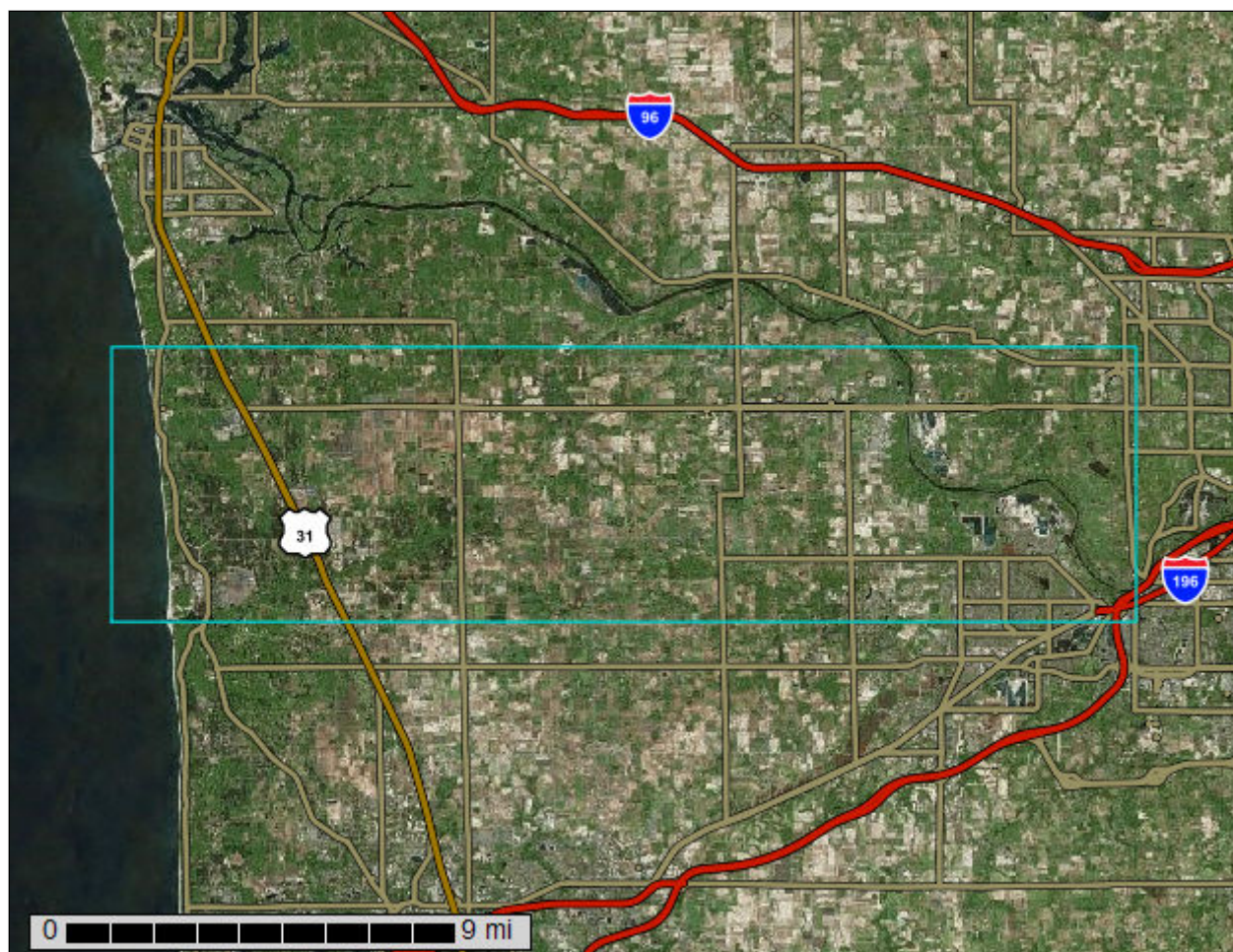
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Kent County, Michigan, and Ottawa County, Michigan**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Soil Map.....	9
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

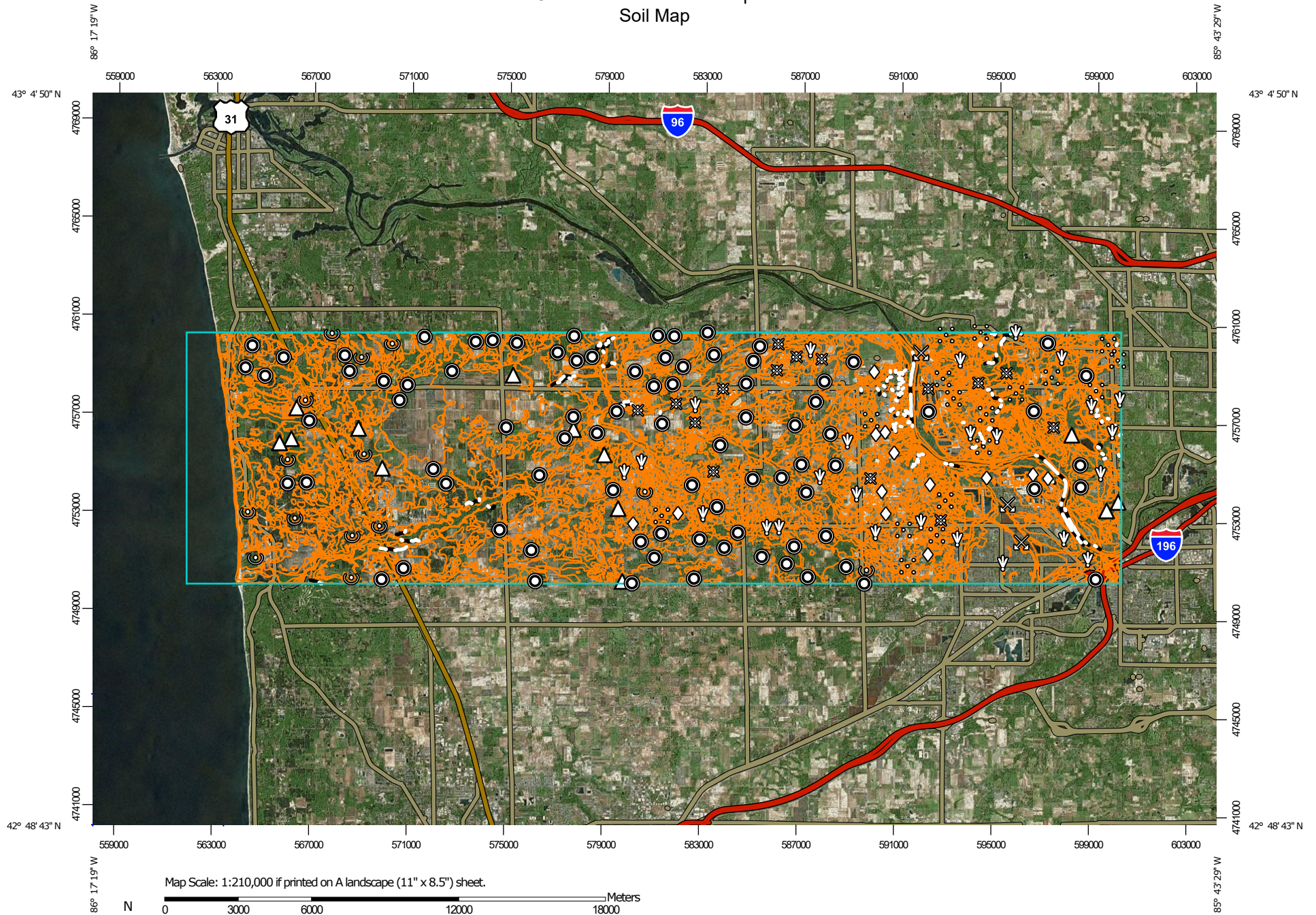
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

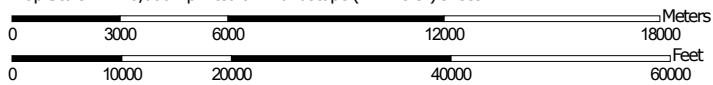
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:210,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kent County, Michigan

Survey Area Data: Version 24, Sep 4, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2B	Oakville fine sand, moderately wet, 0 to 4 percent slopes	51.3	0.1%
4B	Perrin gravelly loamy sand, 0 to 4 percent slopes	15.1	0.0%
5	Algansee loamy fine sand	30.4	0.0%
6	Glendora loamy sand	24.5	0.0%
7	Cohoctah loam	75.0	0.1%
9B	Rimer loamy fine sand, 0 to 4 percent slopes	75.5	0.1%
12B	Tustin loamy fine sand, 2 to 6 percent slopes	6.2	0.0%
13A	Metamora sandy loam, 0 to 3 percent slopes	4.6	0.0%
15	Sloan loam	30.7	0.0%
16	Ceresco loam	23.4	0.0%
17B	Chelsea loamy fine sand, 0 to 6 percent slopes	59.9	0.1%
17C	Chelsea loamy fine sand, 6 to 12 percent slopes	49.9	0.1%
17D	Chelsea loamy fine sand, 12 to 18 percent slopes	21.0	0.0%
17E	Chelsea loamy fine sand, 18 to 45 percent slopes	22.9	0.0%
18B	Glynwood loam, 2 to 6 percent slopes	45.7	0.0%
18C	Glynwood loam, 6 to 12 percent slopes	1.7	0.0%
22B	Oshtemo sandy loam, 0 to 6 percent slopes	99.4	0.1%
22C	Oshtemo sandy loam, 6 to 12 percent slopes	5.5	0.0%
23A	Thetford loamy sand, 0 to 3 percent slopes	3.6	0.0%
24A	Abscota loamy sand, 0 to 3 percent slopes	25.2	0.0%
25B	Oakville fine sand, cool, 0 to 6 percent slopes	43.9	0.0%
25C	Oakville fine sand, cool, 6 to 12 percent slopes	49.7	0.1%
25D	Oakville fine sand, cool, 12 to 18 percent slopes	8.8	0.0%
25E	Oakville fine sand, cool, 18 to 45 percent slopes	21.2	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
27B	Wasepi loamy sand, 0 to 4 percent slopes	2.2	0.0%
28	Gilford fine sandy loam, 0 to 2 percent slopes, gravelly subsoil	28.0	0.0%
29B	Plainfield sand, 0 to 6 percent slopes	2.4	0.0%
30B	Spinks loamy sand, 0 to 6 percent slopes	24.7	0.0%
30C	Spinks loamy sand, 6 to 12 percent slopes	1.2	0.0%
30D	Spinks loamy sand, 12 to 18 percent slopes	3.7	0.0%
36B	Filer loam, 2 to 6 percent slopes	38.8	0.0%
36C	Filer loam, 6 to 12 percent slopes	16.9	0.0%
36D	Filer loam, 12 to 18 percent slopes	67.4	0.1%
37B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	84.2	0.1%
38	Parkhill loam, non dense till subsoil, 0 to 2 percent slopes	12.8	0.0%
42B	Tedrow loamy fine sand, 0 to 4 percent slopes	22.9	0.0%
43	Granby loamy fine sand, 0 to 2 percent slopes	6.9	0.0%
45B	Onkama loam, Lake Michigan Lobe, 2 to 6 percent slopes	35.4	0.0%
45C	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	19.8	0.0%
45D	Perrinton loam, 12 to 18 percent slopes	5.7	0.0%
46B	Ithaca loam, 1 to 6 percent slopes	218.7	0.2%
47	Pewamo loam	70.5	0.1%
48B	Metea loamy sand, 2 to 6 percent slopes	35.1	0.0%
48C	Metea loamy sand, 6 to 12 percent slopes	47.7	0.0%
48D	Metea loamy sand, 12 to 18 percent slopes	11.2	0.0%
49B	Selfridge loamy sand, 0 to 4 percent slopes	16.4	0.0%
51B	Oakville fine sand, loamy substratum, 0 to 6 percent slopes	6.0	0.0%
56C	Scalley sandy loam, 6 to 12 percent slopes	3.8	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
59B	Okee loamy fine sand, 1 to 6 percent slopes	25.3	0.0%
62B	Tekenink fine sandy loam, 2 to 6 percent slopes	91.6	0.1%
62D	Tekenink fine sandy loam, 12 to 18 percent slopes	1.5	0.0%
62E	Tekenink fine sandy loam, 18 to 40 percent slopes	0.3	0.0%
63	Urban land-Cohoctah complex	17.8	0.0%
66B	Boyer loamy sand, 0 to 6 percent slopes	28.3	0.0%
66C	Boyer loamy sand, 6 to 12 percent slopes	2.7	0.0%
66D	Boyer loamy sand, 12 to 18 percent slopes	1.7	0.0%
75	Udorthents, loamy	10.1	0.0%
76	Udipsamments, nearly level to steep	56.8	0.1%
77	Pits, gravel	56.8	0.1%
78	Urban land	39.0	0.0%
80	Udorthents, nearly level to steep	52.3	0.1%
81B	Urban land-Spinks complex, 0 to 8 percent slopes	8.0	0.0%
82B	Urban land-Perrinton complex, 0 to 8 percent slopes	241.6	0.2%
83B	Marlette loam, 2 to 6 percent slopes	31.7	0.0%
89E	Marlette-Oakville-Boyer complex, 15 to 60 percent slopes	11.3	0.0%
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	16.1	0.0%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	3.3	0.0%
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	118.5	0.1%
HgtalA	Houghton muck, ponded, lake moderated, 0 to 1 percent slopes	19.5	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	45.2	0.0%
W	Water	26.8	0.0%
Subtotals for Soil Survey Area		2,484.0	2.6%
Totals for Area of Interest		97,317.1	100.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	566.0	0.6%
Ak	Alganssee loamy sand	308.1	0.3%
AIA	Allendale sandy loam, 0 to 4 percent slopes	661.8	0.7%
ArB	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes	610.8	0.6%
BeA	Belding sandy loam, 0 to 2 percent slopes	104.5	0.1%
BeB	Belding sandy loam, 2 to 6 percent slopes	179.4	0.2%
BIA	Blount loam, 0 to 2 percent slopes	26.0	0.0%
BIB	Blount loam, 2 to 6 percent slopes	4.7	0.0%
BNL	Blownout land	33.2	0.0%
BpA	Bowers loam, 0 to 2 percent slopes	326.6	0.3%
BpB	Bowers loam, 2 to 6 percent slopes	61.7	0.1%
BrA	Boyer loamy sand, 0 to 2 percent slopes	1,570.1	1.6%
BrB	Boyer loamy sand, 2 to 6 percent slopes	245.7	0.3%
BrC	Boyer loamy sand, 6 to 12 percent slopes	49.4	0.1%
BrmaaA	Brems-Spinks complex, 0 to 2 percent slopes	133.9	0.1%
Bv	Brevort sandy loam	331.3	0.3%
By	Bruce loam	22.3	0.0%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	1,314.0	1.4%
Ce	Ceresco loam	411.8	0.4%
ChB	Coloma loamy sand, 0 to 6 percent slopes	4,670.8	4.8%
ChC	Coloma loamy sand, 6 to 12 percent slopes	190.0	0.2%
CIB	Chelsea complex, 0 to 6 percent slopes	3.4	0.0%
Cm	Cohoctah loam	367.3	0.4%
CnB	Conover loam, 2 to 6 percent slopes	20.8	0.0%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	6,856.5	7.0%
CrB	Croswell sand, 0 to 6 percent slopes	1,902.3	2.0%
DNL	Dune land	99.4	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	41.2	0.0%
FoB	Fox sandy loam, 0 to 6 percent slopes	316.9	0.3%
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil	777.6	0.8%
GeA	Gladwin sandy loam, 0 to 2 percent slopes	1,010.2	1.0%
GeB	Gladwin sandy loam, 2 to 6 percent slopes	132.6	0.1%
Gl	Glendora sandy loam	604.7	0.6%
Gm	Granby loamy sand, lake plain, 0 to 2 percent slopes	17,080.6	17.6%
Gn	Granby fine sandy loam, lake plain, 0 to 2 percent slopes	3,448.0	3.5%
Gr	Gravel pits	345.7	0.4%
Hg	Hettinger loam	465.7	0.5%
HgtafA	Houghton-Adrian mucks, lake moderated, 0 to 1 percent slopes	739.5	0.8%
IoA	Iosco loamy sand, 0 to 4 percent slopes	945.9	1.0%
IrA	Iosco and Allendale loamy sands, 0 to 4 percent slopes	22.9	0.0%
IsB	Iosco-Belding complex, 2 to 6 percent slopes	8.6	0.0%
KaC	Kalkaska sand, 0 to 12 percent slopes	48.8	0.1%
KnA	Kawkawlin loam, 0 to 2 percent slopes	1,267.1	1.3%
KnB	Kawkawlin loam, 2 to 6 percent slopes	3,074.7	3.2%
KoA	Kibbie loam, 0 to 2 percent slopes	110.2	0.1%
KoB	Kibbie loam, 2 to 6 percent slopes	14.9	0.0%
La	Lacota silt loam	618.5	0.6%
Lb	Lake beaches	89.4	0.1%
Ls	Linwood muck	41.6	0.0%
Ma	Made land	100.4	0.1%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	140.4	0.1%
McA	Mancelona loamy sand, 0 to 2 percent slopes	2,012.1	2.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
McB	Mancelona loamy sand, 2 to 6 percent slopes	846.4	0.9%
McC	Mancelona loamy sand, 6 to 12 percent slopes	97.9	0.1%
MhA	Matherton loam, 0 to 2 percent slopes	281.0	0.3%
MmB	Menominee loamy sand, 2 to 6 percent slopes	215.4	0.2%
MmC	Menominee loamy sand, 6 to 12 percent slopes	34.4	0.0%
MnA	Metamora sandy loam, 0 to 2 percent slopes	84.3	0.1%
MnB	Metamora sandy loam, 2 to 6 percent slopes	62.3	0.1%
MoB	Wawasee loam, 2 to 6 percent slopes	2.5	0.0%
MoC	Wawasee loam, 6 to 12 percent slopes	9.2	0.0%
MoD	Miami loam, 12 to 18 percent slopes	4.8	0.0%
MtB	Morley loam, 2 to 6 percent slopes	11.3	0.0%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	0.2	0.0%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	2,594.4	2.7%
NeC	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	1,013.0	1.0%
NeD	Nester loam, 12 to 18 percent slopes	269.6	0.3%
NeE	Nester loam, 18 to 25 percent slopes	161.0	0.2%
NeF	Nester loam, 25 to 45 percent slopes	902.1	0.9%
NsC3	Nester clay loam, 6 to 12 percent slopes, severely eroded	59.2	0.1%
NsD3	Nester clay loam, 12 to 18 percent slopes, severely eroded	66.8	0.1%
NsE3	Nester clay loam, 18 to 25 percent slopes, severely eroded	9.0	0.0%
NsF3	Nester clay loam, 25 to 45 percent slopes, severely eroded	252.9	0.3%
NwB	Newaygo sandy loam, 0 to 6 percent slopes	145.0	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
OsA	Oshtemo sandy loam, 0 to 2 percent slopes	902.8	0.9%
OsB	Oshtemo sandy loam, 2 to 6 percent slopes	147.7	0.2%
OsC	Oshtemo sandy loam, 6 to 12 percent slopes	102.9	0.1%
OsD	Oshtemo sandy loam, 12 to 18 percent slopes	30.4	0.0%
OwB	Owosso sandy loam, 2 to 6 percent slopes	61.6	0.1%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	5,858.4	6.0%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	4,465.0	4.6%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	107.4	0.1%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	240.7	0.2%
PlfacD	Plainfield sand, dunes, 6 to 18 percent slopes	641.9	0.7%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	898.1	0.9%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	240.2	0.2%
Pn	Pinconning loamy sand	477.3	0.5%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	5,275.4	5.4%
PpsahB	Pipestone loamy sand, lake moderated, 0 to 4 percent slopes	1,411.7	1.5%
Pr	Pinconning and Breckenridge sandy loams	100.1	0.1%
RcA	Richter sandy loam, 0 to 2 percent slopes	663.1	0.7%
RcB	Richter sandy loam, 2 to 6 percent slopes	175.3	0.2%
SeA	Selkirk loam, 0 to 2 percent slopes	5.0	0.0%
SeB	Selkirk loam, 2 to 6 percent slopes	35.3	0.0%
Sh	Shoals loam	210.8	0.2%
Sl	Sewage lagoons	12.8	0.0%
Sm	Sims loam	666.7	0.7%
Sn	Sloan loam	1,346.1	1.4%
SnkabB	Spinks-Fern complex, 2 to 6 percent slopes	163.6	0.2%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SpA	Spinks loamy sand, 0 to 2 percent slopes	80.2	0.1%
SpB	Spinks loamy sand, 2 to 6 percent slopes	27.5	0.0%
SpC	Spinks loamy sand, 6 to 12 percent slopes	15.6	0.0%
Tc	Toledo silty clay loam	59.3	0.1%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	143.0	0.1%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	234.6	0.2%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	94.0	0.1%
To	Tonkey sandy loam	586.4	0.6%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	10.0	0.0%
UIA	Ubly sandy loam, 0 to 2 percent slopes	249.2	0.3%
UIB	Ubly sandy loam, 2 to 6 percent slopes	180.3	0.2%
UIC	Ubly sandy loam, 6 to 12 percent slopes	82.5	0.1%
W	Water	1,723.2	1.8%
Wa	Wallkill silt loam	13.3	0.0%
Wm	Warners muck	21.0	0.0%
WsA	Wasepi sandy loam, 0 to 2 percent slopes	408.9	0.4%
Wt	Washtenaw loam	14.9	0.0%
WuC	Wind eroded land, sloping	331.8	0.3%
Subtotals for Soil Survey Area		90,168.4	92.7%
Totals for Area of Interest		97,317.1	100.0%

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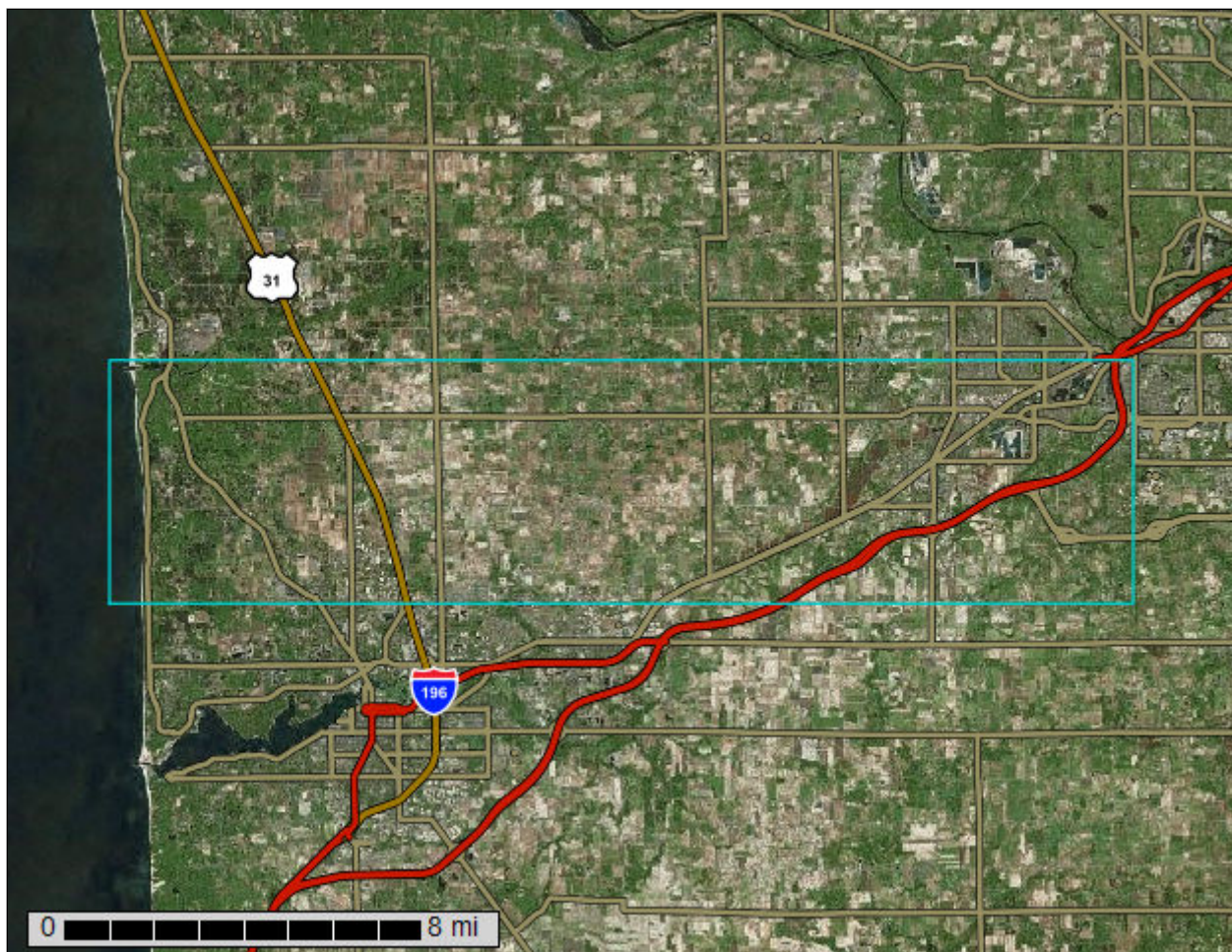
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Kent County, Michigan, and Ottawa County, Michigan



January 27, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

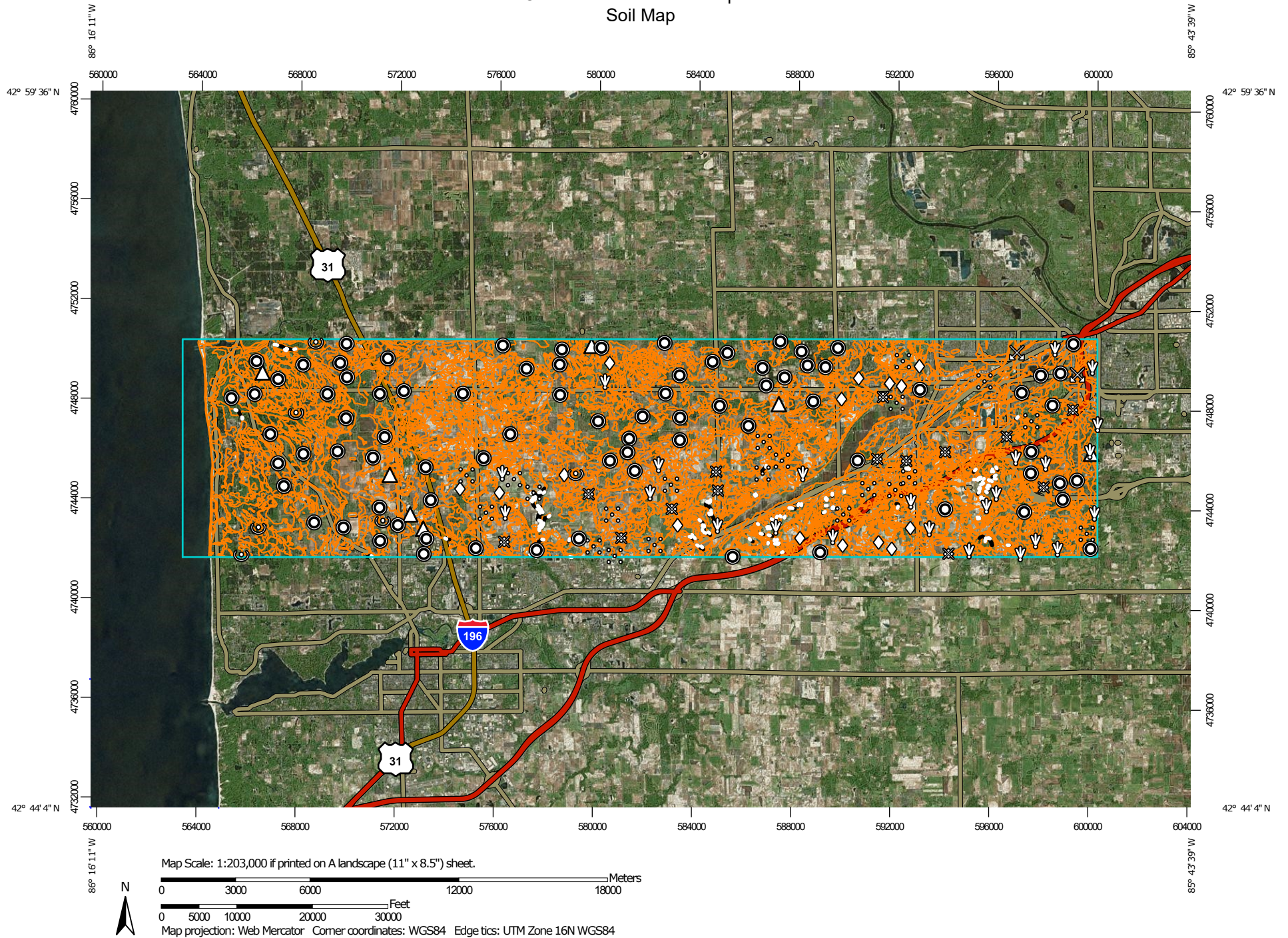
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kent County, Michigan

Survey Area Data: Version 24, Sep 4, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2B	Oakville fine sand, moderately wet, 0 to 4 percent slopes	13.6	0.0%
4B	Perrin gravelly loamy sand, 0 to 4 percent slopes	47.5	0.1%
5	Algansee loamy fine sand	5.6	0.0%
6	Glendora loamy sand	59.2	0.1%
7	Cohoctah loam	57.5	0.1%
13A	Metamora sandy loam, 0 to 3 percent slopes	68.4	0.1%
14	Shoals loam	28.3	0.0%
15	Sloan loam	84.4	0.1%
16	Ceresco loam	14.2	0.0%
17B	Chelsea loamy fine sand, 0 to 6 percent slopes	77.9	0.1%
17C	Chelsea loamy fine sand, 6 to 12 percent slopes	7.2	0.0%
17D	Chelsea loamy fine sand, 12 to 18 percent slopes	0.9	0.0%
18C	Glynwood loam, 6 to 12 percent slopes	8.9	0.0%
22B	Oshtemo sandy loam, 0 to 6 percent slopes	136.8	0.2%
23A	Thetford loamy sand, 0 to 3 percent slopes	8.2	0.0%
25E	Oakville fine sand, cool, 18 to 45 percent slopes	2.0	0.0%
27B	Wasepi loamy sand, 0 to 4 percent slopes	70.1	0.1%
28	Gilford fine sandy loam, 0 to 2 percent slopes, gravelly subsoil	43.7	0.1%
29B	Plainfield sand, 0 to 6 percent slopes	61.8	0.1%
30B	Spinks loamy sand, 0 to 6 percent slopes	93.7	0.1%
30C	Spinks loamy sand, 6 to 12 percent slopes	33.8	0.0%
30D	Spinks loamy sand, 12 to 18 percent slopes	27.0	0.0%
36B	Filer loam, 2 to 6 percent slopes	45.3	0.1%
36C	Filer loam, 6 to 12 percent slopes	82.6	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
36D	Filer loam, 12 to 18 percent slopes	47.5	0.1%
36E	Filer loam, 18 to 35 percent slopes	19.7	0.0%
37B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	35.0	0.0%
38	Parkhill loam, non dense till subsoil, 0 to 2 percent slopes	16.6	0.0%
39C	Arkport loamy very fine sand, 6 to 12 percent slopes	0.2	0.0%
40B	Matherton loam, 0 to 4 percent slopes	3.3	0.0%
42B	Tedrow loamy fine sand, 0 to 4 percent slopes	0.4	0.0%
43	Granby loamy fine sand, 0 to 2 percent slopes	10.2	0.0%
45F	Perrinton loam, 25 to 40 percent slopes	2.7	0.0%
48B	Metea loamy sand, 2 to 6 percent slopes	13.3	0.0%
48C	Metea loamy sand, 6 to 12 percent slopes	13.2	0.0%
49B	Selfridge loamy sand, 0 to 4 percent slopes	20.8	0.0%
51B	Oakville fine sand, loamy substratum, 0 to 6 percent slopes	0.9	0.0%
51C	Oakville fine sand, loamy substratum, 6 to 12 percent slopes	22.3	0.0%
52	Belleville loamy sand	4.8	0.0%
62B	Tekenink fine sandy loam, 2 to 6 percent slopes	2.5	0.0%
62C	Tekenink fine sandy loam, 6 to 12 percent slopes	2.2	0.0%
66B	Boyer loamy sand, 0 to 6 percent slopes	86.6	0.1%
66C	Boyer loamy sand, 6 to 12 percent slopes	2.4	0.0%
66D	Boyer loamy sand, 12 to 18 percent slopes	20.9	0.0%
66E	Boyer loamy sand, 18 to 40 percent slopes	1.2	0.0%
76	Udipsamments, nearly level to steep	64.8	0.1%
78	Urban land	23.3	0.0%
81B	Urban land-Spinks complex, 0 to 8 percent slopes	93.3	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
83B	Marlette loam, 2 to 6 percent slopes	5.8	0.0%
84B	Dixboro loamy fine sand, 0 to 4 percent slopes	1.8	0.0%
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	11.2	0.0%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	35.3	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	14.1	0.0%
W	Water	7.3	0.0%
Subtotals for Soil Survey Area		1,662.1	2.1%
Totals for Area of Interest		79,946.0	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	194.3	0.2%
Ak	Algansee loamy sand	44.7	0.1%
AIA	Allendale sandy loam, 0 to 4 percent slopes	860.3	1.1%
ArB	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes	564.0	0.7%
BeA	Belding sandy loam, 0 to 2 percent slopes	114.8	0.1%
BeB	Belding sandy loam, 2 to 6 percent slopes	745.7	0.9%
BIA	Blount loam, 0 to 2 percent slopes	1,362.3	1.7%
BIB	Blount loam, 2 to 6 percent slopes	1,540.2	1.9%
BNL	Blownout land	16.9	0.0%
BpA	Bowers loam, 0 to 2 percent slopes	337.9	0.4%
BpB	Bowers loam, 2 to 6 percent slopes	292.9	0.4%
BrA	Boyer loamy sand, 0 to 2 percent slopes	1,402.4	1.8%
BrB	Boyer loamy sand, 2 to 6 percent slopes	407.6	0.5%
BrC	Boyer loamy sand, 6 to 12 percent slopes	46.8	0.1%
BrmaaA	Brems-Spinks complex, 0 to 2 percent slopes	389.7	0.5%
Bu	Breckenridge sandy loam	191.5	0.2%
Bv	Brevort sandy loam	62.6	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
By	Bruce loam	72.7	0.1%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	1,474.8	1.8%
Ce	Ceresco loam	237.8	0.3%
ChB	Coloma loamy sand, 0 to 6 percent slopes	668.6	0.8%
ChC	Coloma loamy sand, 6 to 12 percent slopes	5.6	0.0%
CIB	Chelsea complex, 0 to 6 percent slopes	81.4	0.1%
Cm	Cohoctah loam	166.3	0.2%
CnB	Conover loam, 2 to 6 percent slopes	42.7	0.1%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	2,671.7	3.3%
CrB	Croswell sand, 0 to 6 percent slopes	1,286.5	1.6%
DNL	Dune land	17.8	0.0%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	276.9	0.3%
FoB	Fox sandy loam, 0 to 6 percent slopes	54.5	0.1%
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil	703.1	0.9%
GeA	Gladwin sandy loam, 0 to 2 percent slopes	78.3	0.1%
GeB	Gladwin sandy loam, 2 to 6 percent slopes	8.3	0.0%
Gl	Glendora sandy loam	15.1	0.0%
Gm	Granby loamy sand, lake plain, 0 to 2 percent slopes	11,344.5	14.2%
Gn	Granby fine sandy loam, lake plain, 0 to 2 percent slopes	2,071.6	2.6%
Gr	Gravel pits	244.8	0.3%
Hg	Hettinger loam	490.2	0.6%
HgtafA	Houghton-Adrian mucks, lake moderated, 0 to 1 percent slopes	593.6	0.7%
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	39.2	0.0%
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	25.0	0.0%
IoA	Iosco loamy sand, 0 to 4 percent slopes	1,382.7	1.7%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
IrA	Iosco and Allendale loamy sands, 0 to 4 percent slopes	912.4	1.1%
IsB	Iosco-Belding complex, 2 to 6 percent slopes	1,040.9	1.3%
KaC	Kalkaska sand, 0 to 12 percent slopes	12.2	0.0%
KnA	Kawkawlin loam, 0 to 2 percent slopes	957.8	1.2%
KnB	Kawkawlin loam, 2 to 6 percent slopes	6,824.8	8.5%
KoA	Kibbie loam, 0 to 2 percent slopes	325.8	0.4%
KoB	Kibbie loam, 2 to 6 percent slopes	326.0	0.4%
La	Lacota silt loam	114.0	0.1%
Lb	Lake beaches	85.6	0.1%
Ls	Linwood muck	12.7	0.0%
Ma	Made land	195.8	0.2%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	546.4	0.7%
McA	Mancelona loamy sand, 0 to 2 percent slopes	327.3	0.4%
McB	Mancelona loamy sand, 2 to 6 percent slopes	318.0	0.4%
McC	Mancelona loamy sand, 6 to 12 percent slopes	68.9	0.1%
Me	Marsh	17.6	0.0%
MhA	Matherton loam, 0 to 2 percent slopes	185.0	0.2%
MmB	Menominee loamy sand, 2 to 6 percent slopes	418.4	0.5%
MmC	Menominee loamy sand, 6 to 12 percent slopes	96.6	0.1%
MnA	Metamora sandy loam, 0 to 2 percent slopes	75.7	0.1%
MnB	Metamora sandy loam, 2 to 6 percent slopes	37.0	0.0%
MoB	Wawasee loam, 2 to 6 percent slopes	318.7	0.4%
MoC	Wawasee loam, 6 to 12 percent slopes	183.5	0.2%
MoD	Miami loam, 12 to 18 percent slopes	37.0	0.0%
MoF	Miami loam, 18 to 45 percent slopes	78.3	0.1%
MtB	Morley loam, 2 to 6 percent slopes	2,219.4	2.8%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MtC2	Morley loam, 6 to 12 percent slopes, eroded	950.8	1.2%
MtE2	Morley loam, 18 to 25 percent slopes, eroded	260.9	0.3%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	277.1	0.3%
MuF3	Morley clay loam, 25 to 45 percent slopes, severely eroded	1,150.6	1.4%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	618.3	0.8%
NeC	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	655.5	0.8%
NeD	Nester loam, 12 to 18 percent slopes	86.3	0.1%
NeE	Nester loam, 18 to 25 percent slopes	8.6	0.0%
NeF	Nester loam, 25 to 45 percent slopes	28.2	0.0%
NsC3	Nester clay loam, 6 to 12 percent slopes, severely eroded	9.9	0.0%
NsD3	Nester clay loam, 12 to 18 percent slopes, severely eroded	79.0	0.1%
NsE3	Nester clay loam, 18 to 25 percent slopes, severely eroded	69.2	0.1%
NsF3	Nester clay loam, 25 to 45 percent slopes, severely eroded	129.4	0.2%
NwB	Newaygo sandy loam, 0 to 6 percent slopes	20.0	0.0%
OsA	Oshtemo sandy loam, 0 to 2 percent slopes	29.8	0.0%
OsB	Oshtemo sandy loam, 2 to 6 percent slopes	213.3	0.3%
OsC	Oshtemo sandy loam, 6 to 12 percent slopes	51.6	0.1%
OwB	Owosso sandy loam, 2 to 6 percent slopes	159.7	0.2%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	1,350.7	1.7%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	2,486.5	3.1%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	13.6	0.0%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	0.1	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PlfacD	Plainfield sand, dunes, 6 to 18 percent slopes	586.5	0.7%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	981.3	1.2%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	117.6	0.1%
Pn	Pinconning loamy sand	384.1	0.5%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	3,180.8	4.0%
PpsahB	Pipestone loamy sand, lake moderated, 0 to 4 percent slopes	2,931.4	3.7%
Pr	Pinconning and Breckenridge sandy loams	1,679.3	2.1%
RcA	Richter sandy loam, 0 to 2 percent slopes	1,068.8	1.3%
RcB	Richter sandy loam, 2 to 6 percent slopes	258.1	0.3%
Sd	Sand pits	12.0	0.0%
SeA	Selkirk loam, 0 to 2 percent slopes	18.2	0.0%
SeB	Selkirk loam, 2 to 6 percent slopes	53.5	0.1%
Sh	Shoals loam	462.6	0.6%
Sm	Sims loam	1,209.9	1.5%
Sn	Sloan loam	1,331.8	1.7%
SnkabB	Spinks-Fern complex, 2 to 6 percent slopes	256.4	0.3%
SpA	Spinks loamy sand, 0 to 2 percent slopes	108.3	0.1%
SpB	Spinks loamy sand, 2 to 6 percent slopes	175.6	0.2%
SpC	Spinks loamy sand, 6 to 12 percent slopes	216.9	0.3%
Tc	Toledo silty clay loam	144.2	0.2%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	124.9	0.2%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	118.7	0.1%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	98.9	0.1%
To	Tonkey sandy loam	862.4	1.1%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	91.2	0.1%
UdB	Udipsamments, nearly level and undulating	14.2	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UIA	Ubly sandy loam, 0 to 2 percent slopes	10.7	0.0%
UIB	Ubly sandy loam, 2 to 6 percent slopes	99.3	0.1%
UIC	Ubly sandy loam, 6 to 12 percent slopes	24.3	0.0%
W	Water	925.6	1.2%
Wa	Walkkill silt loam	280.7	0.4%
Wm	Warners muck	182.4	0.2%
WsA	Wasepi sandy loam, 0 to 2 percent slopes	646.4	0.8%
Wt	Washtenaw loam	103.4	0.1%
WuC	Wind eroded land, sloping	167.4	0.2%
Subtotals for Soil Survey Area		75,941.1	95.0%
Totals for Area of Interest		79,946.0	100.0%

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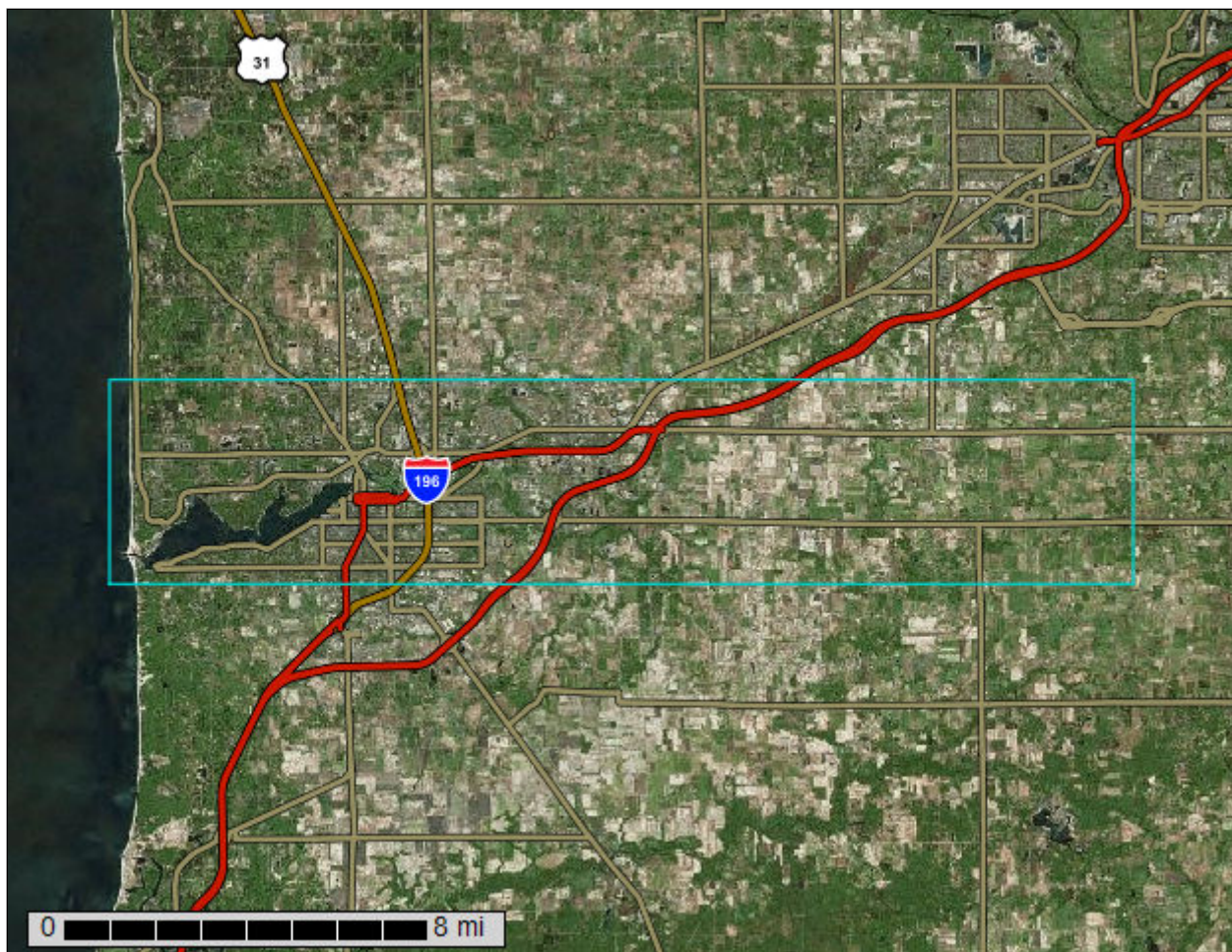
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Allegan County, Michigan, Kent County, Michigan, and Ottawa County, Michigan**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

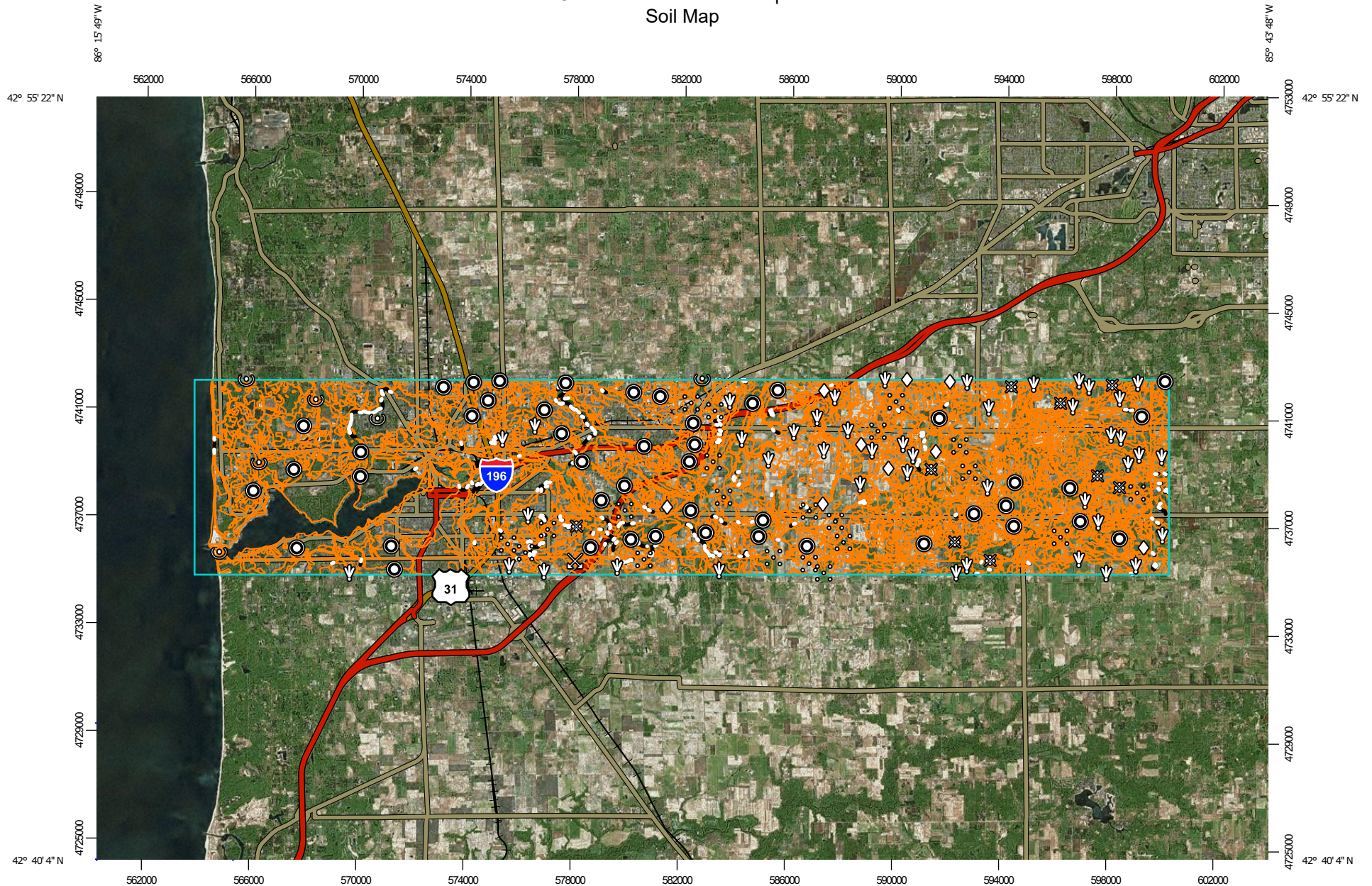
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

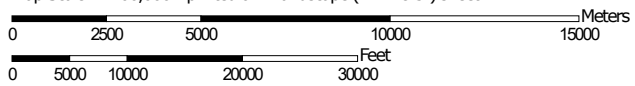
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Map Scale: 1:200,000 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Allegan County, Michigan

Survey Area Data: Version 23, Sep 2, 2025

Soil Survey Area: Kent County, Michigan

Survey Area Data: Version 24, Sep 4, 2025

Soil Survey Area: Ottawa County, Michigan

Survey Area Data: Version 20, Sep 4, 2025

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

MAP LEGEND

MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Glendora loamy sand	99.1	0.2%
4	Dune land and Beaches	12.9	0.0%
8B	Glynwood clay loam, 1 to 6 percent slopes	121.9	0.2%
8C	Glynwood clay loam, 6 to 12 percent slopes	19.3	0.0%
10E	Oakville fine sand, lake moderated, 18 to 50 percent slopes	79.1	0.1%
11B	Oshtemo-Chelsea complex, 0 to 6 percent slopes	92.4	0.1%
11C	Oshtemo-Chelsea complex, 6 to 12 percent slopes	31.1	0.0%
11D	Oshtemo-Chelsea complex, 12 to 18 percent slopes	26.4	0.0%
11E	Oshtemo-Chelsea complex, 18 to 35 percent slopes	1.3	0.0%
12B	Ockley loam, 1 to 6 percent slopes	6.4	0.0%
14C	Filer loam, 6 to 12 percent slopes	51.5	0.1%
14D	Filer loam, 12 to 18 percent slopes	25.2	0.0%
14E	Filer loam, 18 to 35 percent slopes	1.8	0.0%
16B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	110.1	0.2%
17	Brookston loam, 0 to 2 percent slopes	25.1	0.0%
18	Pits	1.8	0.0%
19A	Brady sandy loam, 0 to 3 percent slopes	58.9	0.1%
21B	Capac-Wixom complex, 1 to 4 percent slopes	178.6	0.3%
23	Sebewa loam, 0 to 2 percent slopes	8.6	0.0%
27B	Metea loamy fine sand, 1 to 6 percent slopes	30.0	0.0%
27C	Metea loamy fine sand, 6 to 12 percent slopes	21.8	0.0%
28A	Rimer loamy sand, 0 to 4 percent slopes	447.5	0.7%
29	Cohoctah silt loam	173.6	0.3%
30	Colwood silt loam	38.9	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
31B	Tekenink loamy fine sand, 2 to 6 percent slopes	328.8	0.5%
31C	Tekenink loamy fine sand, 6 to 12 percent slopes	16.8	0.0%
31D	Tekenink loamy fine sand, 12 to 18 percent slopes	8.0	0.0%
33A	Kibbie fine sandy loam, 0 to 3 percent slopes	39.6	0.1%
36	Corunna sandy loam	55.0	0.1%
39	Granby loamy sand, lake plain, 0 to 2 percent slopes	49.5	0.1%
41B	Blount silt loam, 1 to 4 percent slopes	860.9	1.3%
42B	Metamora sandy loam, 1 to 4 percent slopes	108.6	0.2%
44B	Chelsea loamy fine sand, 0 to 6 percent slopes	75.5	0.1%
44C	Chelsea loamy fine sand, 6 to 12 percent slopes	30.3	0.0%
44D	Chelsea loamy fine sand, 12 to 18 percent slopes	6.4	0.0%
45	Pewamo silt loam	197.3	0.3%
48	Belleville loamy sand	16.9	0.0%
49A	Tedrow fine sand, 0 to 4 percent slopes	66.8	0.1%
50	Aquents and Histosols, ponded	1.9	0.0%
51A	Thetford loamy fine sand, 0 to 4 percent slopes	69.1	0.1%
57A	Covert sand, 0 to 4 percent slopes	10.9	0.0%
62	Sloan silt loam	30.8	0.0%
63B	Riddles loam, lake moderated, 0 to 6 percent slopes	27.6	0.0%
64	Belleville-Brookston complex	65.3	0.1%
66	Udipsamments, nearly level to gently sloping	11.3	0.0%
67	Martisco muck	3.6	0.0%
69	Newton mucky fine sand	5.1	0.0%
70A	Morocco fine sand, 0 to 3 percent slopes	18.4	0.0%
75B	Capac-Marlette loams, 1 to 6 percent slopes	163.3	0.3%
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	13.5	0.0%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	35.9	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	165.4	0.3%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	810.5	1.2%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	12.2	0.0%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	0.7	0.0%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	14.1	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	0.0	0.0%
PpsadB	Pipestone sand, lake moderated, 0 to 4 percent slopes	52.5	0.1%
W	Water	1.8	0.0%
Subtotals for Soil Survey Area		5,037.7	7.7%
Totals for Area of Interest		65,177.2	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2B	Oakville fine sand, moderately wet, 0 to 4 percent slopes	6.4	0.0%
4B	Perrin gravelly loamy sand, 0 to 4 percent slopes	5.4	0.0%
5	Algansee loamy fine sand	8.2	0.0%
6	Glendora loamy sand	18.9	0.0%
11B	Owosso-Marlette sandy loams, 2 to 6 percent slopes	22.0	0.0%
13A	Metamora sandy loam, 0 to 3 percent slopes	20.2	0.0%
14	Shoals loam	13.8	0.0%
15	Sloan loam	47.7	0.1%
17B	Chelsea loamy fine sand, 0 to 6 percent slopes	7.3	0.0%
17C	Chelsea loamy fine sand, 6 to 12 percent slopes	1.9	0.0%
22B	Oshtemo sandy loam, 0 to 6 percent slopes	52.3	0.1%
22C	Oshtemo sandy loam, 6 to 12 percent slopes	46.8	0.1%
23A	Thetford loamy sand, 0 to 3 percent slopes	14.2	0.0%
27B	Wasepi loamy sand, 0 to 4 percent slopes	51.8	0.1%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
28	Gilford fine sandy loam, 0 to 2 percent slopes, gravelly subsoil	76.1	0.1%
30B	Spinks loamy sand, 0 to 6 percent slopes	52.0	0.1%
30C	Spinks loamy sand, 6 to 12 percent slopes	34.5	0.1%
30D	Spinks loamy sand, 12 to 18 percent slopes	2.8	0.0%
31	Wallkill silt loam	16.5	0.0%
36B	Filer loam, 2 to 6 percent slopes	36.7	0.1%
36C	Filer loam, 6 to 12 percent slopes	74.4	0.1%
36D	Filer loam, 12 to 18 percent slopes	23.9	0.0%
36E	Filer loam, 18 to 35 percent slopes	4.1	0.0%
37B	Capac loam, Lake Michigan lobe, 0 to 4 percent slopes	16.4	0.0%
41B	Kibbie loam, 0 to 4 percent slopes	3.0	0.0%
48B	Metea loamy sand, 2 to 6 percent slopes	4.9	0.0%
48C	Metea loamy sand, 6 to 12 percent slopes	2.0	0.0%
56B	Scalley sandy loam, 2 to 6 percent slopes	5.2	0.0%
62B	Tekenink fine sandy loam, 2 to 6 percent slopes	80.2	0.1%
62C	Tekenink fine sandy loam, 6 to 12 percent slopes	52.9	0.1%
62D	Tekenink fine sandy loam, 12 to 18 percent slopes	7.1	0.0%
66C	Boyer loamy sand, 6 to 12 percent slopes	11.1	0.0%
66D	Boyer loamy sand, 12 to 18 percent slopes	89.3	0.1%
67D	Kalamazoo loam, 12 to 18 percent slopes	5.0	0.0%
73	Sebewa loam, 0 to 2 percent slopes	8.7	0.0%
74	Dumps	1.1	0.0%
83B	Marlette loam, 2 to 6 percent slopes	0.6	0.0%
84B	Dixboro loamy fine sand, 0 to 4 percent slopes	22.3	0.0%
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	11.0	0.0%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HgtacA	Houghton muck, lake moderated, 0 to 1 percent slopes	145.2	0.2%
HgtalA	Houghton muck, ponded, lake moderated, 0 to 1 percent slopes	2.1	0.0%
PmsabA	Palms muck, lake moderated, 0 to 1 percent slopes	2.3	0.0%
W	Water	0.5	0.0%
Subtotals for Soil Survey Area		1,108.6	1.7%
Totals for Area of Interest		65,177.2	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdraeA	Adrian muck, lake moderated, 0 to 1 percent slopes	464.9	0.7%
Ak	Algansee loamy sand	71.4	0.1%
AIA	Allendale sandy loam, 0 to 4 percent slopes	197.5	0.3%
ArB	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes	113.1	0.2%
BeA	Belding sandy loam, 0 to 2 percent slopes	11.0	0.0%
BeB	Belding sandy loam, 2 to 6 percent slopes	299.6	0.5%
BIA	Blount loam, 0 to 2 percent slopes	2,065.2	3.2%
BIB	Blount loam, 2 to 6 percent slopes	5,749.0	8.8%
BNL	Blownout land	33.7	0.1%
BpA	Bowers loam, 0 to 2 percent slopes	219.8	0.3%
BpB	Bowers loam, 2 to 6 percent slopes	182.8	0.3%
BrA	Boyer loamy sand, 0 to 2 percent slopes	88.4	0.1%
BrB	Boyer loamy sand, 2 to 6 percent slopes	93.3	0.1%
BrC	Boyer loamy sand, 6 to 12 percent slopes	96.3	0.1%
BrmaaA	Brems-Spinks complex, 0 to 2 percent slopes	84.3	0.1%
Bu	Breckenridge sandy loam	234.3	0.4%
Bv	Brevort sandy loam	24.6	0.0%
By	Bruce loam	208.4	0.3%
CaradA	Carlisle muck, lake moderated, 0 to 2 percent slopes	826.4	1.3%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ce	Ceresco loam	767.0	1.2%
ChB	Coloma loamy sand, 0 to 6 percent slopes	706.5	1.1%
ChC	Coloma loamy sand, 6 to 12 percent slopes	43.2	0.1%
Cm	Cohoctah loam	853.3	1.3%
CnB	Conover loam, 2 to 6 percent slopes	698.6	1.1%
CovabB	Covert-Pipestone sands, 0 to 6 percent slopes	1,324.2	2.0%
CrB	Croswell sand, 0 to 6 percent slopes	1,495.3	2.3%
DNL	Dune land	51.7	0.1%
EdwacA	Edwards muck, lake moderated, 0 to 1 percent slopes	192.3	0.3%
FoB	Fox sandy loam, 0 to 6 percent slopes	35.9	0.1%
Gd	Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil	812.0	1.2%
GeA	Gladwin sandy loam, 0 to 2 percent slopes	859.9	1.3%
GeB	Gladwin sandy loam, 2 to 6 percent slopes	482.4	0.7%
Gl	Glendora sandy loam	59.5	0.1%
Gm	Granby loamy sand, lake plain, 0 to 2 percent slopes	1,656.8	2.5%
Gn	Granby fine sandy loam, lake plain, 0 to 2 percent slopes	309.8	0.5%
Gr	Gravel pits	432.1	0.7%
Hg	Hettinger loam	137.2	0.2%
HgtafA	Houghton-Adrian mucks, lake moderated, 0 to 1 percent slopes	199.9	0.3%
HIB	Hillsdale sandy loam, lake moderated, 2 to 6 percent slopes	1,068.5	1.6%
HIC	Hillsdale sandy loam, lake moderated, 6 to 12 percent slopes	800.0	1.2%
IoA	Iosco loamy sand, 0 to 4 percent slopes	560.4	0.9%
IsB	Iosco-Belding complex, 2 to 6 percent slopes	4.4	0.0%
KaC	Kalkaska sand, 0 to 12 percent slopes	26.9	0.0%
KnA	Kawkawlin loam, 0 to 2 percent slopes	166.2	0.3%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KnB	Kawkawlin loam, 2 to 6 percent slopes	577.0	0.9%
KoA	Kibbie loam, 0 to 2 percent slopes	274.5	0.4%
KoB	Kibbie loam, 2 to 6 percent slopes	406.3	0.6%
La	Lacota silt loam	49.0	0.1%
Lb	Lake beaches	126.1	0.2%
Ls	Linwood muck	48.2	0.1%
Ma	Made land	192.9	0.3%
MaraaB	Marlette-Capac-Thetford complex, 2 to 6 percent slopes	347.9	0.5%
McA	Mancelona loamy sand, 0 to 2 percent slopes	1,334.1	2.0%
McB	Mancelona loamy sand, 2 to 6 percent slopes	1,446.4	2.2%
McC	Mancelona loamy sand, 6 to 12 percent slopes	95.9	0.1%
Me	Marsh	415.9	0.6%
MhA	Matherton loam, 0 to 2 percent slopes	63.0	0.1%
MmB	Menominee loamy sand, 2 to 6 percent slopes	116.7	0.2%
MmC	Menominee loamy sand, 6 to 12 percent slopes	2.9	0.0%
MnA	Metamora sandy loam, 0 to 2 percent slopes	711.2	1.1%
MnB	Metamora sandy loam, 2 to 6 percent slopes	990.1	1.5%
MoB	Wawasee loam, 2 to 6 percent slopes	1,128.3	1.7%
MoC	Wawasee loam, 6 to 12 percent slopes	823.9	1.3%
MoD	Miami loam, 12 to 18 percent slopes	451.6	0.7%
MoF	Miami loam, 18 to 45 percent slopes	323.2	0.5%
MtB	Morley loam, 2 to 6 percent slopes	2,240.1	3.4%
MtC2	Morley loam, 6 to 12 percent slopes, eroded	1,239.6	1.9%
MtE2	Morley loam, 18 to 25 percent slopes, eroded	51.6	0.1%
MuD3	Morley clay loam, 12 to 18 percent slopes, severely eroded	62.3	0.1%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MuF3	Morley clay loam, 25 to 45 percent slopes, severely eroded	360.7	0.6%
NeB	Perrinton loam, Lake Michigan Lobe, 2 to 6 percent slopes	8.8	0.0%
NeC	Onkama loam, Lake Michigan Lobe, 6 to 12 percent slopes	228.9	0.4%
NeF	Nester loam, 25 to 45 percent slopes	2.0	0.0%
NsF3	Nester clay loam, 25 to 45 percent slopes, severely eroded	106.0	0.2%
NwB	Newaygo sandy loam, 0 to 6 percent slopes	7.9	0.0%
OsA	Oshtemo sandy loam, 0 to 2 percent slopes	154.6	0.2%
OsB	Oshtemo sandy loam, 2 to 6 percent slopes	423.0	0.6%
OsC	Oshtemo sandy loam, 6 to 12 percent slopes	177.5	0.3%
OsD	Oshtemo sandy loam, 12 to 18 percent slopes	407.5	0.6%
OwB	Owosso sandy loam, 2 to 6 percent slopes	523.7	0.8%
PlfabB	Plainfield sand, lake plain, 0 to 6 percent slopes	4,750.4	7.3%
PlfabD	Plainfield sand, lake plain, 6 to 18 percent slopes	1,090.2	1.7%
PlfabE	Plainfield sand, high ecological site, 18 to 30 percent slopes	5.4	0.0%
PlfabF	Plainfield sand, high ecological site, 30 to 50 percent slopes	25.2	0.0%
PlfacD	Plainfield sand, dunes, 6 to 18 percent slopes	511.2	0.8%
PlfacF	Plainfield sand, dunes, 18 to 60 percent slopes	465.7	0.7%
PlfafF	Plainfield-Metea-Spinks complex, 35 to 60 percent slopes	96.5	0.1%
Pn	Pinconning loamy sand	148.4	0.2%
PpsaaA	Pipestone-Covert-Saugatuck sands, 0 to 3 percent slopes	726.4	1.1%
PpsahB	Pipestone loamy sand, lake moderated, 0 to 4 percent slopes	890.6	1.4%
RcA	Richter sandy loam, 0 to 2 percent slopes	458.1	0.7%
RcB	Richter sandy loam, 2 to 6 percent slopes	258.9	0.4%
Sa	Sanitary landfills	166.6	0.3%

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Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Sh	Shoals loam	462.6	0.7%
Sl	Sewage lagoons	26.2	0.0%
Sm	Sims loam	1,298.7	2.0%
Sn	Sloan loam	831.1	1.3%
SnkabB	Spinks-Fern complex, 2 to 6 percent slopes	9.4	0.0%
SpA	Spinks loamy sand, 0 to 2 percent slopes	14.5	0.0%
SpB	Spinks loamy sand, 2 to 6 percent slopes	157.4	0.2%
SpC	Spinks loamy sand, 6 to 12 percent slopes	222.6	0.3%
Tc	Toledo silty clay loam	613.4	0.9%
TknabC	Tekenink-Spinks loamy sands, 6 to 12 percent slopes	98.4	0.2%
TknabD	Tekenink-Spinks loamy sands, 12 to 18 percent slopes	149.8	0.2%
TknabE	Tekenink-Spinks loamy sands, 18 to 35 percent slopes	153.9	0.2%
To	Tonkey sandy loam	102.4	0.2%
TsB	Tuscola fine sandy loam, 2 to 6 percent slopes	141.8	0.2%
UdB	Udipsamments, nearly level and undulating	30.5	0.0%
UIB	Ubly sandy loam, 2 to 6 percent slopes	40.8	0.1%
UIC	Ubly sandy loam, 6 to 12 percent slopes	13.0	0.0%
W	Water	2,516.9	3.9%
Wa	Wallkill silt loam	254.5	0.4%
Wm	Warners muck	75.9	0.1%
WsA	Wasepi sandy loam, 0 to 2 percent slopes	26.0	0.0%
Wt	Washtenaw loam	54.6	0.1%
WuC	Wind eroded land, sloping	47.6	0.1%
Subtotals for Soil Survey Area		57,663.0	88.5%
Totals for Area of Interest		65,177.2	100.0%

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