BEFORE THE

MICHIGAN PUBLIC SERVICE COMMISSION

In the matter, on the Commission's own motion, to open a docket for certain regulated electric utilities to file their distribution investment and maintenance plans and for other related, uncontested matters.	))))))	**Case No. U-20147**

REPLY COMMENTS OF THE VIRTUAL POWER PLANT PARTNERSHIP (VP3)

October 24, 2024

The Virtual Power Plant Partnership ("VP3"), an initiative of RMI (founded as Rocky Mountain Institute), respectfully submits the following comments regarding the above referenced matter pursuant to the request for comment issued September 26, 2024 by the Michigan Public Service Commission ("Commission") and the comments previously filed in this document. RMI is an independent, non-partisan, nonprofit organization which works to transform the global energy system to secure a clean, prosperous, zero-carbon future for all. In January 2023, RMI launched an initiative known as Virtual Power Plant Partnership, or VP3. VP3 is a coalition of nonprofit and industry voices working to scale the market for virtual power plants in ways that benefit communities and society. VP3 members span the automotive, building, energy service, software, and other sectors.[1]

On September 26, 2024, the Commission published an order ("Order") in Case No. U-20147. The Order includes a straw proposal ("Straw Proposal"), attached as Exhibit A, p.145, regarding improvements to the distribution planning process developed by the Commission Staff ("Staff").

VP3 appreciates the opportunity to provide comments on the Proposal. VP3 believes the Proposal offers an opportunity to increase transparency into the distribution investment plans of Michigan utilities, to best support a reliable and resilient electric grid. VP3 appreciates the Commission's dedication to "clarify[ing] and improve[ing] the distribution plan process for all moving forward"[2] and exploring how distributed energy resources can provide reliability and resilience in the face of increasing load growth and rising electricity prices.

[1] The Virtual Power Plant Partnership's website, including a list of member organizations: https://vp3.io/.
[2] September 26, 2024 Order in MPSC Case No. U-20147, p. 135.

RMI defines virtual power plants ("VPPs")[3] as grid-integrated aggregations of distributed energy resources ("DERs"). VPPs have also been defined as aggregations of dispatchable energy assets. Both definitions of VPPs are broad and encompass demand response and demand flexibility. VPPs may also include distributed energy resources that inject power into the grid such as solar, stationary battery storage, and emerging electric vehicle-to-grid solutions. VPPs can be dispatched at multiple time scales and frequencies to provide several utility-scale and utility-grade grid services, including:[4]

- Capacity, supply and/or load-modifying services that are capable of reliably and consistently reducing net load system-wide or on specific infrastructure;
- Energy, the production or use of electric power by a device over a period of time;
- Ancillary services, including frequency and voltage regulation;
- Resilience, the overall ability of the electricity system to prevent, mitigate, and recover from wide-area, long-duration outages;
- Deferring or avoiding distribution investments, including small investments (e.g. distribution transformers) or large investments (e.g. substations).

VP3 offers these comments to provide Staff, through additional research and examples, recommendations on how the Commission might increase the specificity of definitions and requirements in the Straw Proposal to ensure that VPPs and DERs are adequately considered in the distribution planning process. More specifically, we recommend the Commission consider:

1. **Recommendation One: Increasing the specificity of grid modernization planning requirements, building off the work the Commission has already done in the *MI Power Grid Final Status Report* and *Grid Integration Study Report*.[5]**
2. **Recommendation Two: Increasing the specificity in the planning requirements for reported data, required analysis, transparency, and coordination across other processes by leveraging lessons learned from distribution planning in other states.**
3. **Recommendation Three: Providing more opportunities for equitable stakeholder engagement as part of the distribution planning process.**

Regarding recommendation one, *increase specificity of grid modernization planning requirements,* VP3 offers the following comments:

I. **Clarify relationship between DER adoption and grid modernization, to ensure that DERs are considered a grid modernization solution in utility plans.[6]** DERs can encompass demand DERs (EV chargers [when set up for parallel operation or bidirectional

[3] January 2023, RMI, *Virtual Power Plants, Real Benefits:* https://rmi.org/insight/virtual-power-plants-real-benefits/.
[4] June 2024, RMI, *Virtual Power Plant Flipbook:* https://rmi.org/insight/virtual-power-plant-flipbook/.
[5] We appreciate all the work the MPSC has prioritized, as summarized in the *MI Power Grid Final Status Report,* April 2023, MPSC Case No. U-20645, https://mi-psc.my.site.com/sfc/servlet.shepherd/version/download/0688y000007bZ2iAAE and the coincident *Grid Integration Study Report*, June 2023, Senate Resolution 143, https://mi-psc.my.site.com/sfc/servlet.shepherd/version/download/0688y000008L2jEAAS.
[6] September 26, 2024 Order in MPSC Case No. U-20147, p. 150

power], smart thermostats, heat pumps, electric water heaters, commercial and industrial equipment), generation DERs (distributed solar), and storage DERs (behind-the-meter battery systems, EV batteries when parallel operation is enabled).[7] We recommend specifying in the Proposal the DER types utilities should include in their grid modernization efforts in their distribution plans to be explicit regarding the grid challenge(s) the DERs are supporting, current status, and implementation strategy for each.[8]

II. **Consider including grid investments in reliability and grid modernization efforts.** Section IV.f. of the Straw Proposal requires utilities to "detail its efforts to address ongoing and upcoming distribution technologies."[9] Referencing Advanced Energy Economy and the Michigan Energy Innovation Business Council's previous comments in the Order,[10] we agree: "*There may also be complementary grid-side investments and solutions the utility could pursue such as volt-var optimization that would leverage investments in AMI and other smart grid technologies — technologies that also support greater DER integration and utilization*." These grid modernization investments support greater data transparency into what is connecting to the distribution grid and enables utilities to more precisely anticipate and plan for impacts to the distribution grid. We encourage the Commission to consider requiring additional detail from utilities on investments in advanced metering infrastructure (AMI) and other smart grid technologies as part of this section. Given the challenges Michigan is facing in affordably improving reliability, the ability of DERs to help delay or avoid distribution grid investments is a significant opportunity for Michigan. Investments on the utility side of the meter will be critical to enabling these capabilities.

III. **Consider hosting at least two stakeholder meetings to establish clearer requirements for grid modernization investments in distribution plans.**[11] Since grid modernization encompasses a wide variety of technologies and implementation strategies, we recommend the Commission hosts at minimum two (2) stakeholder meetings on grid modernization efforts, open to all interested parties (including but not limited to customers, communities, third parties). Since the grid modernization requirements and specifications in the current draft guidelines are broad, collaboration is needed to understand the role that DERs and grid modernization investments could play in utilities' plans. Stakeholder meetings or technical conferences are helpful tools to gather information on best practices and examples from other jurisdictions to support utilities in more efficiently selecting and prioritizing investments for the grid of the future. Education on those investments and the technical and regulatory frameworks that allow the grid to benefit from these possibilities is crucial at this time.

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[7] RMI wrote a report for the NARUC-NASEO DER Integration and Compensation Initiative, published in July 2024: *Aggregated DERs in 2024: The Fundamentals*. The report details the grid services ADERs (or VPPs) can provide, strategies for valuing those services, and options for compensation: https://pubs.naruc.org/pub/98FBE453-02C0-1FE3-0249-3A456BA1E3E7?_gl=1*1kim2d0*_ga*NDc4MDExNDY1LjE2ODM3NTQ4OTE.*_ga_QLH1N3Q1NF*MTcyNTkyNDQ1Ni4xNzYuMC4xNzI1OTI0NDU2LjAuMC4w.

[8] For example, Oregon's latest staff DSP improvement proposal includes data to collect from utilities on EVs and EV charging, demand response and flexible loads, Docket No. UM 2005, p. 9 and 10: https://edocs.puc.state.or.us/efdocs/HAH/um2005hah331431025.pdf.

[9] September 26, 2024 Order in MPSC Case No. U-20147, p. 150

[10] September 26, 2024 Order in MPSC Case No. U-20147, p. 6-9

[11] September 26, 2024 Order in MPSC Case No. U-20147, p. 150

IV. **Consider specifying hosting capacity map granularity, data requirements, and update frequency.**[12] Hosting capacity maps are most useful when they are for small geographic areas (edge lengths on the order of hundreds of feet), include key information (capacity, circuit information, queue information, minimum and maximum constraint metrics and thresholds), are in a commonly accessible and downloadable format to facilitate analysis and comparison (e.g. exportable tabular formats) for interested parties, and are updated frequently (e.g. monthly).[13] These reporting requirements will result in greater transparency of the distribution grid's health and constraints, and enable more precise planning in line with the Commission's stated goals for this proceeding.[14]

Regarding recommendation two, *increase the specificity in the planning requirements for reported data, required analysis, transparency, and coordination across other processes by leveraging lessons learned from distribution planning in other states,* VP3 offers the following comments:

V. **Consider requiring the proposed annual, iterative distribution plan updates to respond to any "unexpected shifts in forecasted metrics or costs… e.g. changes in spending projections, changes in reliability projections, updates to mapping, projected list of projects, etc."**[15] Electricity demand and DER technologies are evolving rapidly, and mandating an annual update review cycle to respond to any shifts in costs (instead of making it optional) will enable utilities to proactively plan for the dynamic rates of change in customer adoption of grid-connected technologies and their potential impacts on the distribution system. VP3 recognizes the potential costs of annual updates, but recent examples such as the COVID-19 pandemic and the rise in manufacturing as a result of federal investments have demonstrated the value of frequent updates to identify unexpected changes needed to grid as they arise. In Connecticut, the Office of Consumer Counsel (OCC) has proposed forward-looking Annual Adjustment Filings to track the implementation of annual Grid Investment Plans. Moreover, they have proposed backwards-looking integrated distribution system planning (IDSP) reviews and Annual Entering Service reviews to increase transparency into actions taken and identify the delta between plans and reality (such as non-wires solution and DER deployments).[16] Additionally, Western Power Distribution in the United Kingdom performs a distribution assessment every six months.[17] Early and often reporting, both forwards and backwards,

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[12] September 26, 2024 Order in MPSC Case No. U-20147, p. 151

[13] Electric Power Engineers letter to MPSC Staff, June 4, 2024: https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/workgroups/DSDA/Hosting-Capacity-Analysis-Memo-MI-PSC-Staff-20240604-final.pdf?rev=d7cc2494136e40d68767e144118d861c&hash=7EAEB6E96F109F304A7550EF33F56B8E.

[14] NREL and IREC published a paper on best practices for data validation for hosting capacity analyses: https://www.nrel.gov/docs/fy22osti/81811.pdf.

[15] September 26, 2024 Order in MPSC Case No. U-20147, p. 134 and 145

[16] August 23, 2024, CT Office of Consumer Counsel, Docket No. 21-05-15RE03, *PURA Investigation into the Establishment of Integrated Distribution System Planning within a Performance-Based Regulation Framework*, https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/f8e301b349664e3c85258b82005bcdd1/$FILE/21-05-15RE03%20-%20OCC%20IDSP%20Recommendations%208-23-24.pdf.

[17] August 2022, Western Power Distribution, *Distribution Network Options Assessment,* https://www.nationalgrid.co.uk/downloads-view-reciteme/609042, p. 13

helps provide more transparency and information between plans and implementation to ensure accountability.

VI. **Consider requiring scenario planning in distribution plans.**[18] Scenario planning is crucial in the current environment of increasing load growth, extreme weather, and electrification. We recommend utilities include scenarios at minimum for low and high electrification, developed based on adoption of technology (including DER) types. For example, Hawaiian Electric includes five scenarios in its Integrated Grid Plan to test assumptions used to inform grid requirements and provide visibility into a range of possible grid outcomes.[19,20]

VII. **Consider including DER avoided upgrades in forecasted O&M and capital spend projections and include a transparent screening process for non-wires solutions (NWS).**[21] The Straw Proposal mentions non-wires alternatives (NWAs – also referred to as NWS), and the avoided or deferred upgrade costs from NWS should be included in the forecasted O&M and capital spend projections. Understanding the savings possible with NWS can support affordability. RMI's *Non-Wires Solutions Implementation Playbook* offers suggestions for screening methodologies amongst other NWS implementation best practices that could be incorporated into distribution planning requirements.[22]

VIII. **Consider requiring the coordination of distribution plans with Renewable Energy Plans (REPs).** We appreciate seeing the provision to coordinate the inputs and outputs of distribution plans with other ongoing planning efforts such as integrated resource plans (IRPs), transportation electrification plans (TEPs), and transmission planning. To drive towards a fully integrated planning process, we recommend additionally including the coordination with REPs, as established in Public Act 235, in the Straw Proposal.[23]

IX. **Consider requiring information around usage of third-party DER asset management programs.** Third-party DER asset management programs are programs where utilities partner with third parties to aggregate DERs, enroll customers, optimize and operate DERs, and/or perform settlements.[24] Including this information in the utility's current operation strategy will be useful to understand if and how they are leveraging these programs with respect to distribution system needs. If there are no third-party asset operation programs in place, we recommend including a provision to explain why. Third-party asset management programs have an ability to bolster competition and drive down costs, promoting affordability outcomes for customers and the grid.

X. **Consider including comparisons against peer companies in the industry and in the Midwest and costs for Historical Outage Events Affecting >1% of the Utility's Customer**

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[18] September 26, 2024 Order in MPSC Case No. U-20147, p. 150

[19] May 2023, Hawaiian Electric, *Integrated Grid Plan,* https://hawaiipowered.com/igpreport/IGP-Report_Final.pdf, p. 98

[20] New York recently initiated a proactive planning proceeding that will heavily rely on scenario planning to identify future grid infrastructure needs. August 15, 2024: NY DPS Matter 24-01242, Case No. 24-E-0364: https://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=24-E-0364&CaseSearch=Search.

[21] September 26, 2024 Order in MPSC Case No. U-20147, p. 150

[22] 2018, RMI, *The Non-Wires Solutions Implementation Playbook*, https://rmi.org/insight/non-wires-solutions-playbook/.

[23] February 8, 2024, Order in MPSC Case No. U-21568

[24] June 2024, RMI, *Virtual Power Plant Flipbook:* https://rmi.org/insight/virtual-power-plant-flipbook/.

Base in Michigan.[25] We appreciate seeing the provision for utilities to benchmark reliability metrics against peer companies for reliability in Part III b. Requiring a similar comparison for historical outages for peer companies in the Midwest will provide useful data to get more clear on the frequency and locations of outages Midwesterners experience across different utilities. Moreover, the addition of a larger time scale metric or separating out major weather events could smooth out single-year variations that can emerge due to differing storm localities in any particular year and identify the impacts of particular storms. Including other costs such as costs associated with outages or average cost of customer power interruptions[26] can create a more robust picture of the impacts of outages in the region.

Regarding recommendation three, *provide more opportunities for equitable stakeholder engagement as part of the distribution planning process,* VP3 offers the following comments:

XI. **Consider requiring that utilities host at minimum two (2) pre-filing stakeholder engagement meetings, with both in-person and virtual meeting formats (hybrid participation).**[27] VP3 has a stated Policy Principle[28] of supporting customer participation through procedural equity. Requiring utilities to host at least two stakeholder engagement meetings (instead of the proposed one) creates a greater opportunity for dialogue between the utilities and interested parties to address topics in more than a single meeting.[29] Additionally, proactive outreach to known stakeholder groups such as equipment manufacturers, third-party service providers, and other interested parties can ensure a robust conversation with representation of diverse perspectives. Moreover, diversifying the formats in which stakeholders can engage is key. In-person meetings support ratepayers who may not have an internet connection. Virtual dial-in options open up access to stakeholders who may be physically unable to travel to the in-person meeting, especially from more remote or rural parts of the state. Therefore, to get the broadest ratepayer participation from all types of customers, we recommend in-person plus virtual options (hybrid format) for all stakeholder meetings.

XII. **Consider coordinating the results of the proposed Environmental Justice Mapping Analysis to greater Justice40 efforts in the state.**[30] We are pleased to see Michigan's commitment to supporting Justice40 communities,[31] as historically disadvantaged communities are often the communities that can benefit most from the wide range of reliability, affordability, and resilience benefits DERs and VPPs provide. We recommend the

[25] September 26, 2024 Order in MPSC Case No. U-20147, p. 149, Part III. E.
[26] Lawrence Berkeley National Laboratory developed an Interruption Cost Estimate (ICE) Calculator to estimate the customer cost impacts of power interruptions: https://emp.lbl.gov/cost-power-interruptions.
[27] September 26, 2024 Order in MPSC Case No. U-20147, p. 146
[28] VP3 published the *VPP Policy Principles*, a set of foundational principles to help energy regulators and policymakers leverage virtual power plants to promote affordability and reliability: https://rmi.org/insight/vpp-policy-principles/.
[29] For example, Oregon's latest distribution system plan (DSP) filing from staff on September 17, 2024 proposes requiring utilities to host at least four (4) pre-filing workshops with interested parties. Docket No. UM 2005, p. 4 and 5: https://edocs.puc.state.or.us/efdocs/HAH/um2005hah331431025.pdf.
[30] September 26, 2024 Order in MPSC Case No. U-20147, p. 149, Part III. H.
[31] https://www.michigan.gov/egle/regulatory-assistance/funding/multi/justice40

results of utilities' environmental justice mapping analysis be shared and coordinated with greater Justice40 efforts to funnel benefits to those communities.

By increasing specificity and requiring additional information and analyses in the Straw Proposal to finalize planning requirements, the Commission can empower utilities to provide a deeper level of transparency into distribution grid health and supporting data and evidence for proposed investments to support the grid of the future. That depth of transparency and planning will enable the flexibility, affordability, reliability, and resilience benefits of DERs, VPPs, and grid-side investments to support Michigan's aging distribution grid and ensure clean, reliable, affordable energy for all.

We are deeply grateful for the opportunity to provide comments. VP3 has an educational mission to increase understanding among regulators and policymakers of how virtual power plants can advance priority objectives in the power system — in addition to our responses above, we are available to provide a further briefing on these topics and resources to the Commission, or respond to the comments provided above.

Respectfully submitted,

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VP3
VIRTUAL POWER PLANT PARTNERSHIP

Exhibit A

Distribution Planning Staff Proposal

a. Purpose

As directed by the Commission, Staff presents this proposal to facilitate a standard approach for future distribution plan filings submitted by each Michigan rate-regulated utility ("utility"). The straw proposal is provided with consideration given to prior Commission orders for content to be included in distribution plans, as well as prior interested party comments and discussion with utilities. The length and content of the plans may change over time based on Commission order.

b. Objectives

The goal of electric distribution plans is to provide the Commission, Commission Staff, and other interested parties a comprehensive understanding of anticipated utility needs, priorities, and spending outside of the contested rate case process, and to allow such parties to properly evaluate significant and necessary investments to the utilities' aging distribution systems.[32] The Commission has established four overarching electric distribution system objectives for distribution planning: safety, reliability and resiliency, cost-effectiveness and affordability, and accessibility.[33] It has also reiterated the importance of plans being based upon reviewable data.[34] The informational nature of the planning process encourages more focus on supportive data than narrative, as distribution plans are not subject to formal approval[35] by the Commission and do not authorize future cost recovery. A utility may adopt its own goals for the distribution plan in addition to those set by the Commission.

Schedule

Distribution plans must be filed every three years, or as otherwise ordered by the Commission, to an appropriate docket, and include a five-year investment plan and an extended (10-15 year) outlook from the date of the filing. The plan must address the specifics detailed below. Plans will be staggered between utilities on a schedule set by the Commission.

[32] September 8, 2022 Order in MPSC Case No. U-20147, p. 66.
[33] August 20, 2020 Order in MPSC Case No. U-20147, pp. 36-37.
[34] September 8, 2022 Order in MPSC Case No. U-20147.
[35] September 8, 2022 Order in MPSC Case No. U-20147, p. 66.

An annual update is optional and intended to provide utilities the opportunity to update information within plan filings including, but not limited to, projections and forecasted costs to align with existing planning objectives. The update is intended to communicate changes in long-term strategy caused by unexpected shifts in forecasted metrics or costs. Annual updates, if appropriate, shall be filed annually from the date of the utility's most recent distribution plan filing in an appropriate docket.

Interested Party Outreach

As defined by the Commission, distribution plans must seek problem descriptions, goals, and possible solutions through community and third-party engagement.[36] To encourage ongoing discussion between utilities and interested parties, outreach and feedback opportunities will be made available by the utilities prior to and after distribution plans are filed.

1. Pre-Filing Outreach

The utility must hold at least one outreach meeting to collaborate with and engage community, customers, and other interested parties in a manner timely enough to ensure input can be incorporated into the plan filing and not less than 12 months prior to the filing. At least half of all, with a minimum of one, outreach meeting(s) must be held outside of normal business hours and offered in the utility's service territory in geographic locations convenient to customers. The utility is encouraged to invite interested parties, community leaders, interested community and advocacy groups, the Commission, and Commission Staff. The outreach is intended to provide transparency into the utility distribution planning process and explore how its goals will affect the distribution system while obtaining input and exploring ideas for the distribution grid of the future.
Hybrid meeting formats that include in-person, phone-in, and virtual options are recommended. For each meeting, the utility shall make the meeting contents publicly available and provide a forum for comments to be shared by parties unable to attend in-person.

2. Post-Filing Outreach and Comment Period

An appropriate docket will be made available for interested parties to file comments to the distribution plan after filing. Initial comments will be accepted for 60 days after the distribution plan filing and reply comments will be accepted for 30 days after the initial comment period. Comments and reply comments will be reviewed by the Commission and considered for future utility plan filings and process improvements.

[36] September 8, 2022 Order in MPSC Case No. U-20147, p. 74.

VP3
VIRTUAL POWER PLANT PARTNERSHIP

Distribution Plan and Documentation

A recommended outline is provided in this proposal for distribution plans. This outline is broad and not intended to be all-inclusive for each utility, but rather a starting point for distribution planning encompassing prior Commission orders and expected supportive data while facilitating filing consistency. If a utility is unable to include one or more of the topics below, a detailed explanation shall be provided.

Where possible and relevant, distribution plans shall be coordinated with the inputs and outputs of other ongoing planning efforts required by the Commission including, but not limited to, a utility's Integrated Resource Plan (IRP), Transportation Electrification Plan (TEP), and transmission planning such as the MISO Transmission Expansion Plan (MTEP) or the PJM Regional Transmission Process (RTEP). Distribution plan spending classifications (such as programs, subprograms, categories) shall be aligned with such classifications within the utility's rate case, with variations explained in detail.

Utilities are encouraged to submit supporting data and documentation. All supporting data for charts, tables, and maps shall be provided as an attachment, appendix, or workpaper to the submitted plan in an accessible format for interested parties to review. All external data sources and references must be appropriately cited.

The following outline and topics are recommended for future distribution plans:

I. Objectives and Goals

II. Third Party and Community Outreach

a. Summary of Pre-Filing Outreach Meeting(s) Sharing Outreach Date(s), Location(s), Issues Identified, Potential Solutions Explored, and Final Plan Impact
b. Summary of Utility Customer, Community, and Local Government Outreach Effort(s), and Program(s), Sharing Issues Identified and Potential Solutions Explored

III. Distribution System Overview

The distribution plan will provide a data-based review of the current and recent historical system characteristics, asset health, and relevant operations to provide basis and context. Maps and GIS data are encouraged formats for this information, where appropriate.

a. General Asset Health and Condition

   The utility shall provide relevant data on its distribution system assets to provide the basis of its planning efforts. Relevant data includes, but is not limited to: age, condition (such as failure rates, outage/interruption causes, and quantifiable impacts from extreme weather events), location, planned upgrades or decommissioning, and voltage characteristics. A map of the utility's service territory shall be provided.

b. Historical Reliability Metrics
   Utilities shall include SAIDI, SAIFI, CAIDI, CELID, and CEMI metrics. Benchmarking of reliability metrics against peer companies in the industry shall be performed and include the following, where able:[37]

   i. With MEDs

   ii. Without MEDs[38]

   iii. By condition (blue sky, gray sky, and catastrophic)[39]

c. Historical Safety Incidents Involving Electric Facilities,[40] including:

   i. Date

   ii. Location

   iii. Electric system voltage

   iv. Affiliation (Company, Contractor, or Public)

d. Historical O&M and Capital Spending

e. Historical Outage Events Affecting >1% of the Utility's Customer Base in Michigan

   i. O&M and capital costs associated with catastrophic event recovery

   ii. If feasible, maps of affected service territory with voltage levels and configurations of impacted customers

f. Operations and Programs
   A brief discussion or summary of the utility's current operation strategy including, but not limited to:

   i. Line clearing/vegetation management, including a map of the current vegetation management cycle as possible

[37] September 8, 2022 Order in MPSC Case No. U-20147, p. 29.
[38] September 8, 2022 Order in MPSC Case No. U-20147, p. 70.
[39] MPSC Service Quality and Reliability Standards R 460.702, updated August 30, 2021.
[40] Accidents reported in accordance with R 460.3804 of the Technical Standards for Electric Service.

ii. Storm response and restoration

iii. Asset management
Details regarding the asset management must describe approaches applied in the utility's planning, efforts to prevent outages from occurring, and reducing risk in a proactive manner. The plans shall not only focus on asset age, but also condition-based assessments performed through monitoring and inspections.[41]

iv. Overlay maps of planned and historic distribution system investments

v. Streetlight/community lighting management, including investment strategy, operations strategy, and light pollution mitigation efforts

g. Resource Challenges
Descriptions of any recent historical or ongoing resource challenges, such as workforce or material supply.

h. Environmental Justice Mapping Analysis
An analysis of environmental justice within the utility's territory with a discussion on environmental justice and how it is incorporated in plans to support affected customers.

IV. Distribution System Planning

The utility shall include an action plan to address the established short-term and long-term challenges and needs. When a benefit cost analysis is used in the action plan, the methodology, analysis, and alternatives of the analysis shall be detailed. If the utility chooses to use scenario planning, it must discuss the analysis performed and present potential challenges under each scenario. Any new pilot proposals must meet Commission guidelines.[42] The action plans shall include the following:

a. Forecasted Reliability Metrics (include five-and ten-year projections)
For the planning period, utilities shall include, where able, SAIDI, SAIFI, CAIDI, CELID, and CEMI with and without MEDs, mapped to planned system investments and expected improvements.

b. Forecasted O&M and Capital Spend Projections (include five-and ten-year projections)

c. Forecasted Workforce and Material Resources
Any resource challenges noted in Section III should be projected and quantified to its impact on system planning. When describing challenges, distribution plans must

[41] September 8, 2022 Order in MPSC Case No. U-20147, p. 74.
[42] September 8, 2022 Order in MPSC Case No. U-20147, p. 74.

provide tangible examples of resource or material supply shortages and quantify the impact to system planning. Citing general market dynamics or the potential for global supply chain risks/bottlenecks are an insufficient basis when estimating future planning requirements.

d. Any Anticipated Changes to Operations and Programs from Section III

e. Resilience Approach and Planning

   i. Vulnerability assessment

   ii. Description of proposed resilience program(s), if applicable

   iii. Projected costs and rate impacts

f. Grid Modernization Efforts
   The utility shall detail its efforts to address ongoing and upcoming distribution technologies and improvements to create a modern grid, including how each of the following topics is included or considered within the action plan:

   i. Distributed Energy Resources (DERs)

   ii. Non-Wires Alternatives (NWAs)

   iii. Rebuilds/Hardening/Conversions

   iv. Undergrounding[43]

   v. Electrification (including TEP integration)
   This can include, but is not limited to, forecasting of system load and impact from these topics on the distribution grid, O&M and capital costs of implementation, impacts to the utility's reliability, effects on local communities, and coordination with other Commission, local, state, and federal guidelines.

g. Hosting Capacity Analysis

   i. Most recently updated Hosting Capacity Go/No Go Maps,[44]provided as an attachment to the filing or as a publicly available URL link.

   ii. Discussion on how the hosting capacity map improves transparency by identifying interconnection points and necessary upgrades to the distribution grid to accommodate DERs

h. Customer Affordability Analysis

   i. Spend prioritization

[43] September 8, 2022 Order in MPSC Case No. U-20147, p. 73.

[44] September 8, 2022 Order in MPSC Case No. U-20147, p. 68.

ii. External funding opportunities exploration and grants

iii. Customer rate impacts by customer class (residential, commercial, and industrial)

V. Additional Requirements

This section encompasses any other elements ordered by the Commission in the appropriate distribution plan docket(s) or other dockets since the previous distribution plan filing. If there are no other elements, this section may be removed.