Midwater Energy Storage Project Advisory Task Force Report

Minnesota Public Utilities Commission
Docket Nos. ESS-24-294; TL-24-295
November 2025

Project Team

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Glossary

Acronym / Term	Definition
ATF	Advisory Task Force
BESS	Battery Energy Storage System
DNR (or MnDNR)	Minnesota Department of Natural Resources
EA	Environmental Assessment
ERP	Emergency Response Plan
ESS Ordinance	Energy Storage System Ordinance
Gpm	gallons per minute
HVTL	High-Voltage Transmission Line
ITC Midwest	International Transmission Company Midwest
kV	Kilovolt
LFP Battery	Lithium-Iron-Phosphate Battery
MISO	Midcontinent Independent System Operator
MW	Megawatt
NMC Battery	Nickel-Manganese-Cobalt Battery
PCA (or MPCA)	Minnesota Pollution Control Agency
PUC (or MPUC or the Commission)	Minnesota Public Utilities Commission
SPCC Plan	Spill Prevention, Control, and Countermeasure Plan
SWPPP	Stormwater Pollution Prevention Plan
WMAs	Wildlife Management Areas

Introduction

On November 19, 2024, Midwater BESS LLC (a subsidiary of Spearmint Renewable Development Company, LLC) submitted an application to the Minnesota Public Utilities Commission (PUC) for a site and route permit for the up to 150 MW Midwater Energy Storage Project and the associated 161 kV high-voltage transmission line (HVTL) in Shell Rock Township, Freeborn County.

The proposed project is located on a 104.4-acre plot of land that is currently under lease with purchase option through agreements with the existing landowners. Approximately 16 acres would be developed and occupied by the Battery Energy Storage System (BESS) facility, its accompanying operational equipment, and fencing. Approximately 8 acres would accommodate the 2,668-foot long HVTL. The project would interconnect with the existing ITC Midwest Glenworth Substation in Freeborn County. (See Appendix A for a map of the proposed site).

In its order of June 2, 2025, the PUC authorized the Minnesota Department of Commerce to establish an Advisory Task Force (ATF) to assist the PUC with the following actions:[1]

1) Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied;

2) Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives;

3) Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility;

4) Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties; and

5) Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services.

(See Appendix B for ATF Charge).

Staff solicited ATF nominations from local units of government and other entities consistent with the PUC's order. Two of the ten anticipated ATF members described in the order were unable to participate.[2]

[1] Pursuant to legislation, Department of Commerce, Energy Environmental Review and Analysis staff transferred from the Department to the PUC's new Energy Infrastructure Permitting unit on July 1, 2025.

[2] An Advisory Task Force invitation email was sent to the Glenville Fire Chief, Matt Webb, on June 16, 2025, and again, on July 9, 2025; however, staff did not receive a response. Additionally, an invitation email was provided to Tabatha Page, Chair of the Glenville-Emmons School Board, on June 14, 2025. The Chair responded on June 17, 2025, explaining that due to the school board schedule and commitments, the board was unable to participate.

Advisory Task Force

Advisory Task Force Member	Government Unit
Melanie Aeschliman, County Administrator	Freeborn County
Nicole Eckstrom, Commissioner	Freeborn County
Jeff Fields, Compliance Officer	IBEW Local 343
Mike Frank, Local Government & Community Affairs Manager	ITC Midwest LLC
Adam Hamberg, Emergency Management Director	Freeborn County Sheriff's Office
Andy Henschel, Administrator	Shell Rock River Watershed District
Tim Kaasa, Town Clerk	Shell Rock Township
Jeff Laskowske, Deputy Fire Chief	Albert Lea Fire Rescue
Mike Lee, Watershed Manager	Shell Rock River Watershed District
Rich Murray, Mayor	City of Albert Lea
Wes Webb, Mayor	City of Glenville

Methodology

The Advisory Task Force met on July 24, August 22, and September 16, 2025 (See Appendix C, Appendix D, and Appendix E for ATF meeting agendas, meetings slides, and meeting notes). In addition to task force members, PUC staff, consulting staff, and representatives of the applicant, Midwater BESS LLC, also attended the meetings. In ATF meeting 2, representatives from the Minnesota Department of Natural Resources (DNR), the Minnesota Pollution Control Agency (MPCA), and the Minnesota State Fire Marshall's office attended and presented topics relevant to the permitting process of the proposed Midwater BESS project. Zan Associates, a PUC consultant, facilitated ATF meetings.

The PUC requested the formation of a task force to identify impacts, issues, mitigation measures, and potential permit conditions that might not have been identified without the insights of local experts. The

goal of the task force was not to reach a unanimous recommendation or decide whether to permit the Midwater BESS project. The purpose of the meeting series was to identify potential impacts and recommend possible mitigation measures that could be studied in the environmental assessment and recommend permit conditions for the PUC to consider during permit decision-making.

Meeting #1 – July 24, 2025

At the first meeting, task force members reviewed the permitting process and the proposed project to date. The task force then used a modified conversation café technique to identify impacts and issues that should be evaluated in the Environmental Assessment (EA). The technique asked task force members to suspend judgment, respect one another, seek to understand rather than persuade, and speak honestly and in depth without repeating the same information. The process involved three rounds. During the first two rounds, task force members identified impacts and issues uninterrupted by other task force members. The third round was a facilitated conversation to dive deeper into the identified impacts and issues and expand upon the first two rounds.

Meeting #2 – August 22, 2025

At the second meeting, presenters from the Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and the Minnesota State Fire Marshall's Office shared their expertise with the group. Samantha Bump described the DNR's process for evaluating proposed projects, and spoke about the role of the DNR in evaluating ecosystems and wildlife management and the lack of available noise data and related studies to evaluate potential wildlife impacts. Linnea Savereide outlined the MPCA's stormwater design requirements and helped answer questions about stormwater runoff ponds. Mike Volz, on behalf of the State Fire Marshall, compared lithium-ion technology with lithium-iron technology and summarized common fire safety protocols (See Appendix G for a comparison of grid-scale BESS options).

Then, task force members reviewed the impacts and issues identified at the first meeting. Using the conversation café technique, task force members then determined potential mitigation measures to address the previously discussed impacts. These mitigation measures could be studied in the EA in the next phase of the permitting process. The task force members also discussed the potential for viable alternative sites that the PUC could evaluate in the EA (See Appendix L for alternative site suggestions).

Meeting #3 – September 16, 2025

At the third meeting, task force members reviewed the previous two meetings, including reviewing the impacts, potential mitigation measures, and viable alternative locations. Task force members further developed the list of mitigation measures, covering all impact categories previously noted in the earlier two meetings. Noting that unanimous agreement is not a requirement as an advisory task force, the task force shared their opinions about the ATF process overall.

Task force members were welcome to bring their own topics and materials and topics to these meetings, and multiple ATF members took the opportunity to do so. Task force members were made aware that all

materials would be appended to this report (See Appendix M). Upon completion of the third meeting, a draft task force report was provided to task force members for review. Comments and edits from members have been incorporated into this final report (See Appendix N for task force comments).

Impacts and Issues to Study in the EA

Task force members identified impacts and issues by responding to the following question: "What impacts and issues should be studied by the Public Utilities Commission when it prepares the environmental assessment for the project?"

Task force facilitators organized the identified impacts into seven broad categories that are listed in alphabetical order in this report.

Alternative Sites

The task force discussed the possibility of viable alternative sites. The task force did not identify any viable site alternatives for study in the EA. The task force expressed frustration at the alternative site selection limitations, and at the fact that the applicant, Midwater BESS LLC, was not required to provide alternative sites in its PUC permit application. Some task force members were concerned about the proximity of the proposed BESS project to the Shell Rock River, a designated state water trail, and the precedent it could set for future BESS sites, strongly preferring a location removed from potential water impacts. In addition to the Shell Rock River, the task force frequently discussed the DNR wildlife management area—home to deer, waterfowl, and upland game—across from the proposed BESS site (See Appendix K for photos and aerial drone footage of the proposed project site).

Decommissioning and Project End-of-Life

The task force held extensive discussions regarding the end-of-life and decommissioning of the Midwater BESS project site. These conversations centered on concerns stemming from past environmental incidents caused by other companies in the region, as well as a desire to prevent any future burden on taxpayers and liability to Freeborn County and the city of Glenville.

Emergency Response

Some task force members were interested in emergency response discussions as they related to their roles in emergency management. A wide variety of topics were discussed, including responses to various potential emergencies (fires, hazardous material leaks and spills, tornadoes, electric shock injuries on-site, and other catastrophic events).

Conversations centered on establishing the necessary planning measures and acquiring sufficient safety equipment to address any potential emergencies at the site. It was noted that the project is situated near

several major buildings and arteries in the region, including the Shell Rock River, a DNR wildlife management area, Highway 65, nearby Union Pacific railroad tracks, and Glenville-Emmons K-12 School. In the event of an evacuation from the school, buses would not be onsite or readily available because any charter buses would likely travel from Albert Lea to the Glenville-Emmons school.

Fire Hazard and Thermal Events

The task force sought additional information regarding the safety of the proposed battery type, lithium-iron, and the expected emergency response protocols. At the task force meetings, guest speakers compared the attributes of lithium-iron technology with lithium-ion technology and discussed the potential fire risks and thermal risks associated with each technology type. Thermal events can create the release of toxins from the battery housing units and/or other components of the BESS. The applicant will not be using lithium-ion batteries and has selected lithium-iron technology over other options for its chemical stability, low risk of hazardous gas emission and low risk of thermal runaway during a fire event.

There were also several discussions about the appropriate training for firefighters, the necessary firefighting equipment, both on the facility site and at the fire station, and the most effective firefighting tactics.

Tax Revenue and Financial Liability

Discussions focused on removing any potential tax burden on residents of the city of Glenville and Freeborn County. The task force members discussed establishing a bond or escrow requirement to cover any costs related to emergency pollution cleanup, site decommissioning, or company bankruptcy.

The task force noted the financial expenses that the Shell Rock River Watershed District has already incurred for river cleanup and highlighted past projects that have left the county with financial liability. Conversations focused on mitigation measures that would prevent a repeat of those events and protect local governments from liability.

Water Resources

Significant discussion centered around protecting the Shell Rock River and the local watershed. Task force members noted the proximity to the river and soil type as concerns that increase the probability that water runoff and potential pollutants infiltrate the groundwater and the river water. Then the task force identified potential mitigation measures for any pollution in water runoff from storms, fire management, or potential leaks and spills.

Groundwater resources were also discussed, as it was noted that there are many drinking water wells in the area (See Appendix H for documentation regarding water wells in the region). Protecting groundwater quality emerged as a topic of discussion throughout the meeting series.

Visual / Aesthetics / Noise

Conversations focused on what type of fence and buffer to have around the facility. Task force members considered the visual appearance and the impact of noise on the community and wildlife. They also noted the potential for impacts to the project from hunting (e.g., stray bullets) at nearby Wildlife Management Areas (WMAs).

Mitigation Measures

Task force members identified potential mitigation measures that could be analyzed in the EA for each of the seven impact and issue categories. The mitigation measures identified by category include:

Alternative Sites

(See the "Identification of Viable Alternative Sites" section of the report on page 12).

Decommissioning and Project End-of-Life

- Requiring Midwater BESS LLC (applicant) to establish a fund that covers the cost of decommissioning, including complete removal of all structures associated with the BESS, water and soil testing in the area after disassembly, and the cost of any potential environmental clean-up and remediation.
- Decommissioning fund placed with a third-party to ensure it is available when needed.
- Revaluation at regular intervals of the decommissioning fund to ensure the value of the fund has kept pace with inflation and covers any potential increases in expected decommissioning costs.

Emergency Services

- Creation of a detailed emergency response plan for all reasonably plausible emergency scenarios provided by the applicant as a permit condition. Plans should include fire safety protocol, emergency fire response, evacuation plans for nearby residents of Glenville and Freeborn County, hazardous materials protocol, environmental mitigation plans, and instructions for access to the facility for local emergency response teams. Plans should be annually or periodically reviewed and updated.
- A full site plan should be provided to local officials and emergency response teams.
- Cooperation from site operators to establish and update on-site safety protocols in collaboration with local emergency response officials. A clearly identified responsible party that local officials can reliably contact while the site is operational.

- Clear processes and requirements for notifying local officials in the case of any on-site incident. Requirements should include notifying local officials from the City of Glenville, Shell Rock Township, Freeborn County, and, if applicable, neighboring municipalities. Requirements should also include notice occurring within 48 hours of any identified safety, hazard, or environmental pollution concerns.
- High-visibility signage outside the BESS facility with contact information for site management teams and local emergency response teams.
- Onsite weather monitoring equipment by the applicant, capable of use in the event of an emergency.

Fire Hazard and Thermal Events

- Regular training on lithium-iron batteries and associated facility technology for local firefighting crews.
- Calculation of appropriate waterflow in gallons per minute (gpm) needed to cool a BESS unit and mitigate runoff. Purchase specialized hose nozzles for local fire response authorities by the applicant to control gpm if necessary.
- On-site, continuous recording cameras that can be monitored remotely by both the facility management team and a third party.
- Feasibility assessment to evaluate the use of dry hydrants and drafting water from the Shell Rock River for fire response.

Financial Liability

- Requiring the applicant to establish and maintain a bond or fund that would cover environmental clean-up costs in the case of an emergency and prevent the financial burden from falling on local taxpayers.
- Requiring the applicant to establish a bond or fund that covers the cost of decommissioning. (See the Decommissioning and Project End-of-Life section above).

Water Resources

- Design and installation of a stormwater runoff pond that is gated for onsite control during any potential contamination event, lined underneath, and effective for a 1.5-inch rainfall event.[3]

[3] This 1.5-inch value, referred to as the Design Rainfall Depth, reflects the Water Quality Volume (QV) design standard used by the Shell Rock River Watershed District. It is greater than the 1-inch practice currently followed by the Minnesota Pollution Control Agency. This practice is based on the recognition that the first 1.5 inches of runoff typically carries most of the pollutants (sediments, oils, nutrients, etc.) that are washed off an impervious surface during a storm.

- Regular cleaning and maintenance of stormwater ponds and related stormwater infrastructure.
- Installation of biochar filters between the stormwater runoff pond and the Shell Rock River (see Appendix J).
- Baseline testing of river water and groundwater in the area, including measurements for the Shell Rock River and nearby well water, and regular, third-party monitoring of river water, nearby wells, and the stormwater runoff ponds.
- Enhanced monitoring plan in the event of an incident.

Visual / Aesthetics / Noise

- Adherence to Freeborn County's new [in development] ESS ordinance regarding vegetative landscape buffers and screening around BESS developments as a permitting condition. Or, in the case that the ordinance has not yet been approved for public release, a recommendation that the Commission impose a similar condition, based on the language in the draft ordinance, and consistent with requirements for energy generation sites in the County. The draft county ordinance also addresses noise and setbacks, among other key factors. (See Appendix I for the draft ESS ordinance).
- Fencing that is unobtrusive, neutral in color, uses non-reflective materials, does not contain barbed wire, and is at least the height of the individual BESS battery units (approximately 10 feet).
- The installation of three distinct rows of planting buffers surrounding the security fence. Plants should be chosen from compatible, local species and approved by the Freeborn County Office of Environmental Services for environmental impact and adhere to ITC Midwest's standards for power line clearance.
- Conduct baseline testing for noise and request a statement from the DNR regarding potential impact of site noise on nearby wildlife from local DNR staff. Mitigate noise impacts.

Identification of Viable Alternative Sites

Charge 1 asks that the task force "identify additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied." A map was provided by the applicant, along with considerations for proposing viable alternative locations (See Appendix F). Considerations for determining whether an alternative site could be viable included:

1. The site falls within one mile of the Glenworth Substation. Moving beyond a mile increases the cost for the project; each mile of 161 kV HVTL costs approximately $2 million.
2. The site is not located in the city of Glenville or in the Shell Rock River floodplain.

3. The land for the alternative site is available to lease or purchase, and a signed purchase agreement can be obtained.
4. The site can be connected, by a 161 kV HVTL, to the Glenworth Substation, and the land required for the HVTL is available to lease or purchase, and a signed purchase agreement can be obtained.
5. The current interconnect with the Midcontinent Independent System Operator (MISO) for the project can be utilized with no additional connections required.
6. Costs related to permitting, engineering, and constructing at an alternative site. Costs include land purchase or lease, additional permitting, engineering, and an estimated $2 million per mile for 161 kV HVTL installation.

The applicant has no obligation to propose alternative sites for its BESS facility in its permit application to the PUC.[4] The task force was informed that viable alternative sites could be added for study in the EA, but that the PUC would need the task force to identify specific sites.

Concerns about the proposed Midwater BESS location primarily stemmed from the site's proximity to the Shell Rock River, a designated state water trail, and the potential for water contamination from stormwater runoff or runoff from emergency fire management or thermal event response. In addition to the Shell Rock River, the task force frequently discussed the DNR wildlife management area across from the proposed BESS site. Several task force members were not convinced that relocating the site would necessarily mitigate some of the identified impacts, particularly those affecting water resources, since any alternative site close to the Glenworth Substation would be in the same watershed as the proposed site. Task force members also cautioned that permitting the Midwater BESS at the proposed site would set a precedent for the permitting of future BESS facilities near water resources.

Some alternative sites were proposed and discussed at the task force meetings (See Appendix L). Some of the mentioned sites would connect to a different substation, a scenario which is not consistent with the task force's charge. A few alternative sites were within a viable distance from the Glenworth Substation, but the task force was unable to ascertain whether the land for the HVTL was available for purchase. The most discussed alternative site was next to the Glenville water treatment facility; however, a potential site near the industrial park was also discussed.

Task force members expressed frustrations that the applicant chose a site so close to a river, a state water trail, and a DNR wildlife management area, especially given that the applicant was not required to provide viable site alternatives. Of concern to the task force members was that the "viability" term was insufficiently defined in the Task Force Charge. This condition led to confusion in approaching the topic.

Additionally, members expressed concern that it was inappropriate for the task force to be expected to determine the availability of property, which was particularly relevant to viable site alternative deliberations. They noted that they lack this type of BESS-siting expertise and maintained it was improper

[4] See Minn. R. 7850.3100

for government staff and elected officials to solicit landowners. The land brokerage task seemed outside the scope of task force expertise and the role of government and public policy.

Task force members felt that there was a lack of clarity around how project costs related to relocating the site would factor into the discussion of "viability." Midwater BESS LLC initially indicated that, due to costs, eligible alternative sites would need to be within a one-mile radius of the proposed site; later, Midwater BESS LLC indicated that sites could have been identified beyond the one-mile radius.

Ultimately, the task force identified two potential alternative sites, but did not have the time, expertise, or perceived authority to directly solicit landowners and determine whether the sites were viable alternatives. The task force, though helpful in discussing and identifying potential impacts and mitigation measures for the PUC's consideration, was not a forum conducive to identifying viable alternative sites for the project. The task force did not have the structure or authority to broker land transactions that would result in viable alternative sites. Further, the task force was limited to potential sites near the Glenworth Substation and was limited in time. To the task force's understanding, it took Midwater BESS LLC several years to plan and develop the Midwater project. It would likely take a similar amount of time and effort, and similar land brokerage authority, to identify viable alternative sites for the project.

Conclusions

As an advisory task force, the unanimous agreement of all task force members is not a requirement nor was it a task force goal. The conclusions below attempt to highlight areas of importance for decision-maker consideration:

1. Impacts on water resources, including the Shell Rock River, its watershed, and the state water trail, are paramount to the task force. Comprehensive and stringent requirements regarding water protection and prevention of potential pollution in stormwater runoff are essential to this project.

2. The task force expressed concerns about the potential impacts to wildlife habitat due to the nearby DNR wildlife management area. If the BESS is sited at the proposed location, the area cannot be a part of the conservation reserve program.

3. Fire safety and thermal events is a topic of interest to the task force. Many task force members are reassured by the decision to use lithium-iron technology on the site, as opposed to other BESS technologies. The task force agreed that the purchase of additional fire safety equipment and regular training for local firefighters should be permit conditions. Some task force members wanted to prepare for worst-case-scenario fire emergencies.

4. Several task force members expressed concern about the siting and permitting process not starting locally, including the lack of notice during the application process and the lack of local control in the permitting process. Task force members noted unhappiness about the project expressed to them by their constituents and by local officials, citing site location near the Shell Rock River and the DNR wildlife management area as a primary concern.

5. Establishing clear guidelines for clean-up costs for contamination during the lifetime of the BESS and decommissioning is important to the task force. The taskforce wants permit conditions that ensure no future tax burden on local communities.

6. The task force expressed a desire to work collaboratively with the applicant and with future site operators. They requested that local officials be put in regular contact with site operators to discuss topics such as emergency response plans, notification of contamination events or fire events, and decommissioning.

Appendices

Appendix A – Map of applicant site

Project Figures

Westwood

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Project Location & USGS Topography

Figure 1 (August, 2024)

Legend

- Project Area
- State Boundary
- County Boundary
- PLSS Township Boundary
- PLSS Section Boundary
- Civil Township Boundary
- Municipal Boundary
- NHD Waterbody
- NHD Flowline
- Major Road
- Road
- Railroad

Data Source(s): Westwood (2024); ESRI WMS USA Topo & World Streets Basemaps (Accessed 2024); PLSS (2022); U.S. Census Bureau (2021 & 2023); MNDOT (2024); NHD (2024).

N

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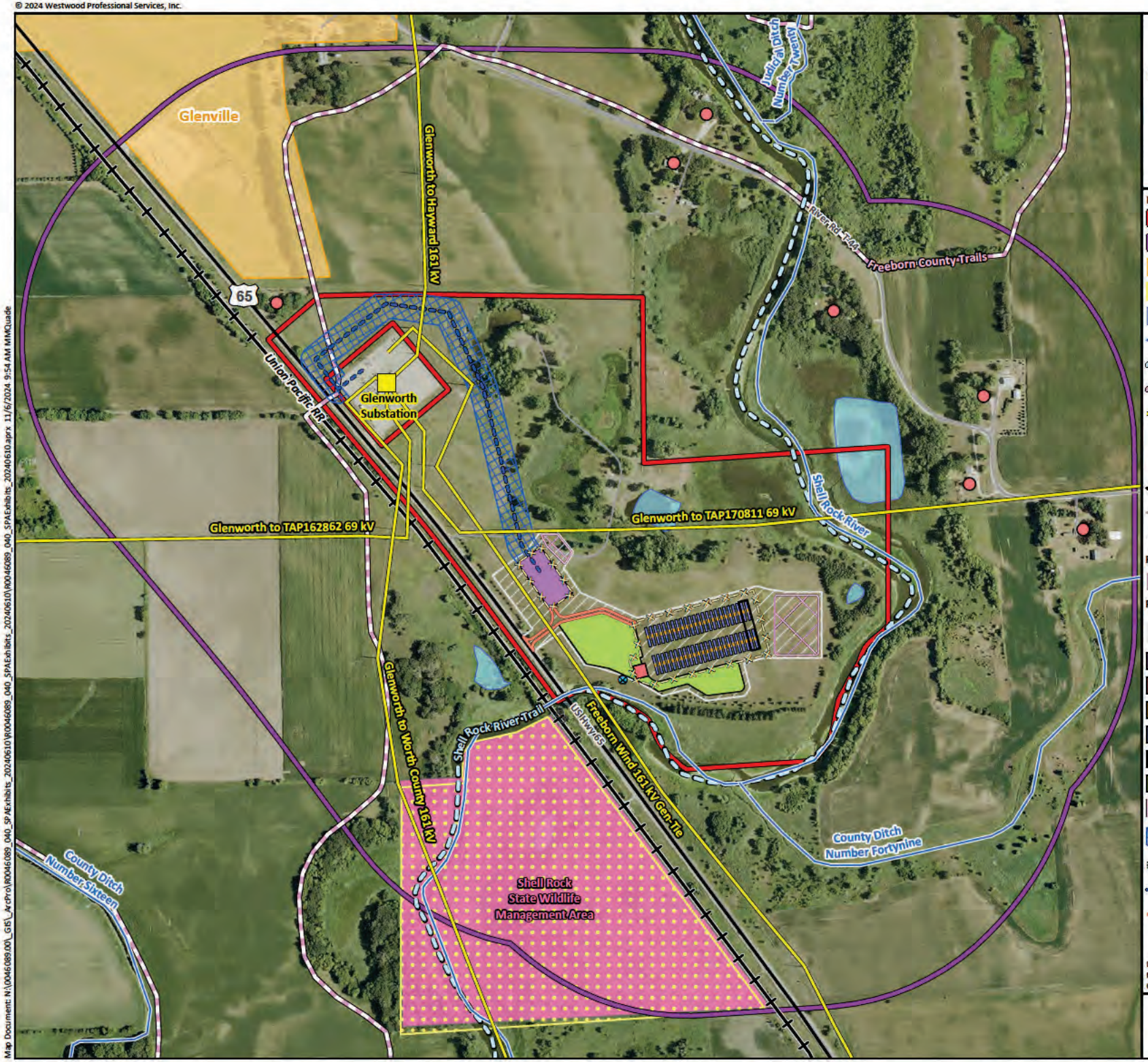

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Project Area & Facilities

Figure 2 (November, 2024)

Legend

- Project Area
- Project Area Quarter-Mile Buffer
- Municipal Boundary
- Wildlife Management Area
- NHD Waterbody
- NHD Flowline
- Water Trail
- Snowmobile Trail
- Existing Transmission Line
- Existing Substation
- Receptor
- Major Road
- Road
- Railroad

PADUS Designation

- State Conservation Area

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed Substation
- Proposed O&M Facility
- Proposed Auxiliary Transformer
- Proposed BESS Unit
- Proposed Future Augementation Area
- Proposed Laydown Yard
- Proposed Basin Area
- Proposed HVTL Facility & Project Development Area
- Proposed Fence Line
- Proposed Tap Line
- Proposed Access Road
- Proposed Leach Field

Data Source(s): Westwood (2024); NAIP (2023); MNDOT (2024); MNDNR (2022 & 2024); NHD (2024); HIFLD (2022 & 2024); U.S. Census Bureau (2021 & 2023); PADUS (2024).

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0 700 Feet

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Topographic Map

Figure 3 (September, 2024)

Legend

- Project Area
- Project Area Half-Mile Buffer
- Major Road
- Road
- Railroad
- 10ft Contour
- 2ft Contour

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed Substation
- Proposed BESS Area
- Proposed HVTL Facility & Project Development Area
- Proposed Fence Line
- Proposed Tap Line
- Proposed Access Road

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2021 & 2023); USGS 3DEP (Accessed 2024).

N

0 1,100 Feet

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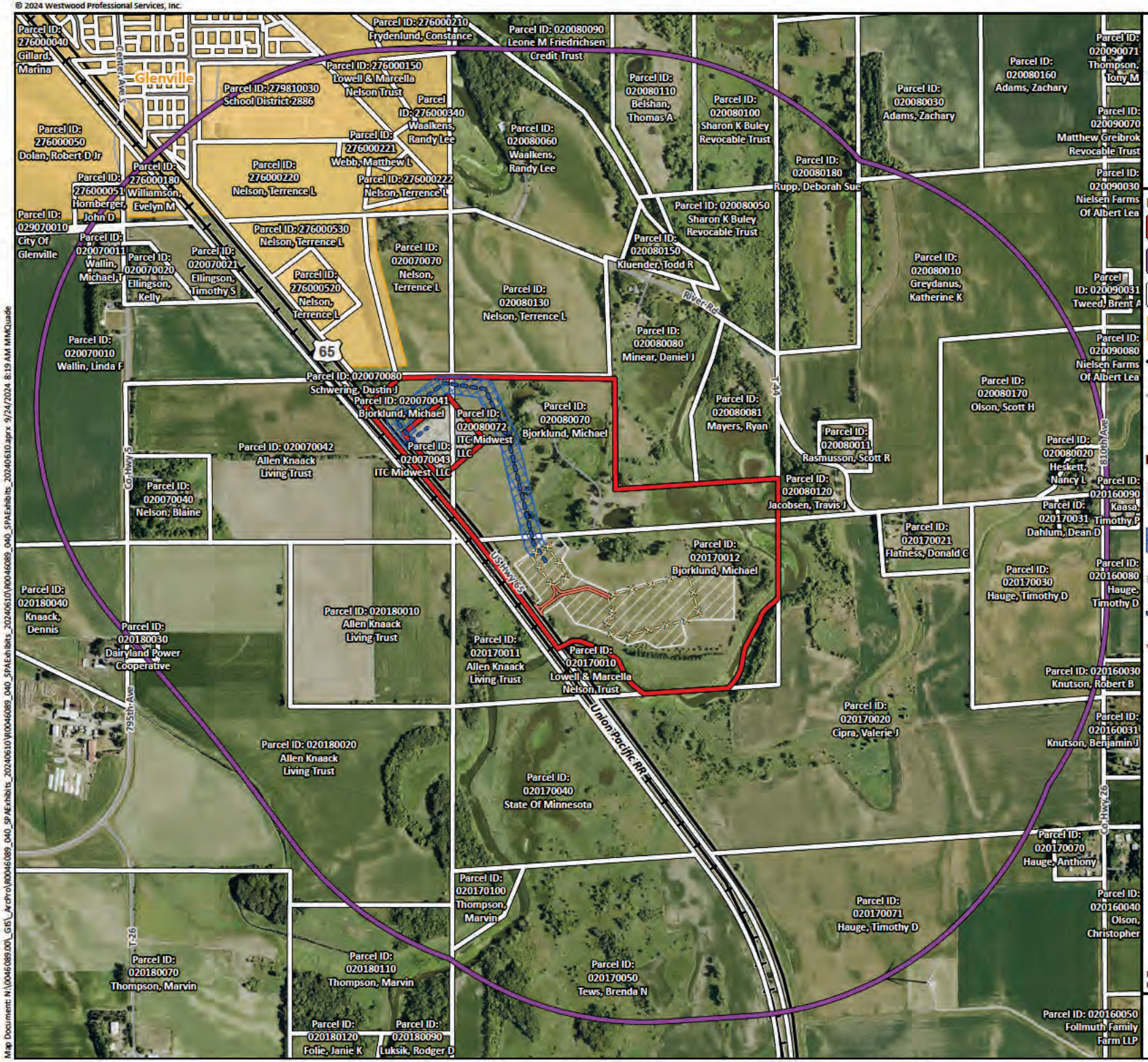

Westwood

Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Land Ownership & Parcel Boundaries

Figure 4 (September, 2024)

Legend

- Project Area
- Project Area Half-Mile Buffer
- Parcel Boundary
- Municipal Boundary
- Major Road
- Road
- Railroad

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed HVTL Facility & Project Development Area
- Proposed Fence Line
- Proposed Tap Line
- Proposed Access Road

Data Source(s): Westwood (2024); NAIP (2023); MNDOT (2024); U.S. Census Bureau (2021 & 2023).

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Land Cover

Figure 5 (August, 2024)

Legend

- Project Area
- Major Road
- Road
- Railroad

NLCD Classification (Acreage & Percent of Project Area)

- Open Water: 4.89 Acres, 4.68%
- Developed, Open Space: 1.64 Acres, 1.57%
- Developed, Low Intensity: 4.6 Acres, 4.4%
- Developed, Medium Intensity: 0.41 Acres, 0.39%
- Developed, High Intensity: 0.02 Acres, 0.02%
- Barren Land: 0.06 Acres, 0.06%
- Herbaceous: 20.04 Acres, 19.19%
- Hay/Pasture: 43.1 Acres, 41.28%
- Cultivated Crops: 7.63 Acres, 7.31%
- Woody Wetlands: 1.78 Acres, 1.7%
- Emergent Herbaceous Wetlands: 20.23 Acres, 19.38%

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2021 & 2023); NLCD (2021).

N

0 500 Feet

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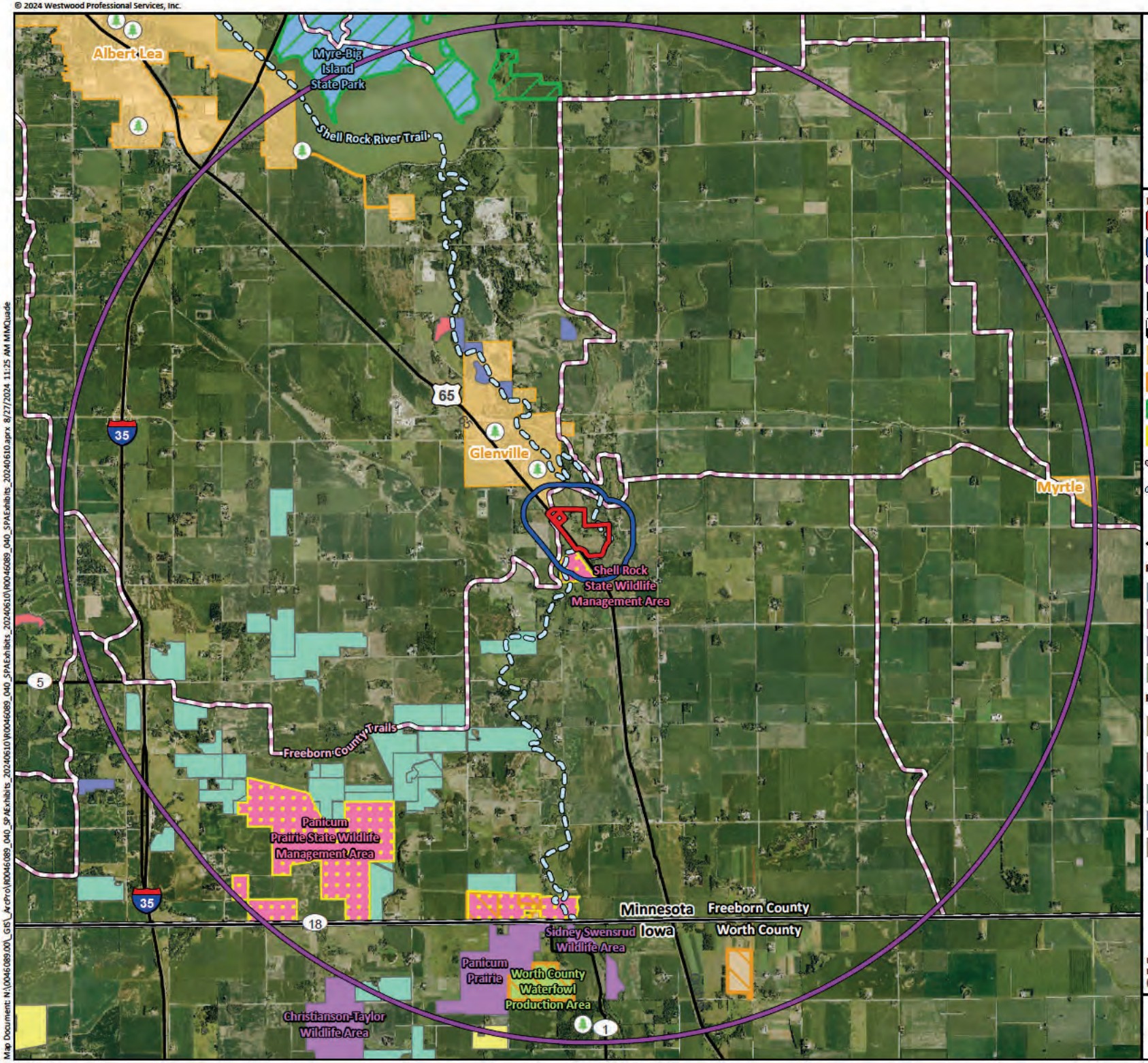

Westwood

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Public Land Ownership & Recreation

Figure 6 (August, 2024)

Legend

- Project Area
- Project Area Quarter-Mile Buffer
- Project Area 5-Mile Buffer
- State Boundary
- County Boundary
- Municipal Boundary
- National Wildlife Refuge
- State Park
- Wildlife Management Area
- Snowmobile Trail
- Water Trail
- Local Park
- Major Road

PADUS Designation

- State Park
- State Conservation Area
- Local Conservation Area
- Resource Management Area

PADUS Conservation Easement Unit Type

- Agricultural Conservation Easement Program - Wetland Reserve Easements
- Conservation Reserve Enhancement Program
- Wetlands Reserve Program
- Permanent Wetland Preserve
- Waterfowl Production Area

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2021); MNDNR (2022 & 2024); PADUS (2024); USFWS (2023); MNDOT (2024).

N

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Map Unit Symbol	Map Unit Name	Hydric Classification	Percent Hydric Classification
1030	Pits, sand and gravel	Non-Hydric	0
W	Water	Non-Hydric	0
41B	Estherville sandy loam, 2 to 6 percent slopes	Predominantly Non-Hydric	1
27	Dickinson fine sandy loam, 0 to 2 percent slopes	Predominantly Non-Hydric	3
156	Fairhaven loam, 0 to 2 percent slopes	Predominantly Non-Hydric	4
41C	Estherville sandy loam, 6 to 12 percent slopes	Predominantly Non-Hydric	4
5B	Dakota loam, 2 to 6 percent slopes	Predominantly Non-Hydric	4
5C	Dakota loam, 6 to 14 percent slopes	Predominantly Non-Hydric	4
41	Estherville sandy loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
5	Dakota loam, 0 to 2 percent slopes	Predominantly Non-Hydric	6
465	Kalmarville loam, frequently flooded	Predominantly Hydric	99
1055	Aquents and Histosols, ponded	All Hydric	100
392	Biscay clay loam, 0 to 2 percent slopes	All Hydric	100
517	Shandep loam	All Hydric	100
525	Muskego soils, 0 to 1 percent slopes	All Hydric	100

Westwood

Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Soils - Hydric Classification

Figure 7 (September, 2024)

Legend

- Project Area
- Soil Unit Boundary
- Major Road
- Road
- Railroad

Hydric Classification

- All Hydric
- Predominantly Hydric

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed HVTL Facility & Project Development Area
- Proposed Fence Line
- Proposed Tap Line
- Proposed Access Road

Data Source(s): Westwood (2024); NAIP (2023); NRCS (Accessed 2024); U.S. Census Bureau (2021 & 2023).

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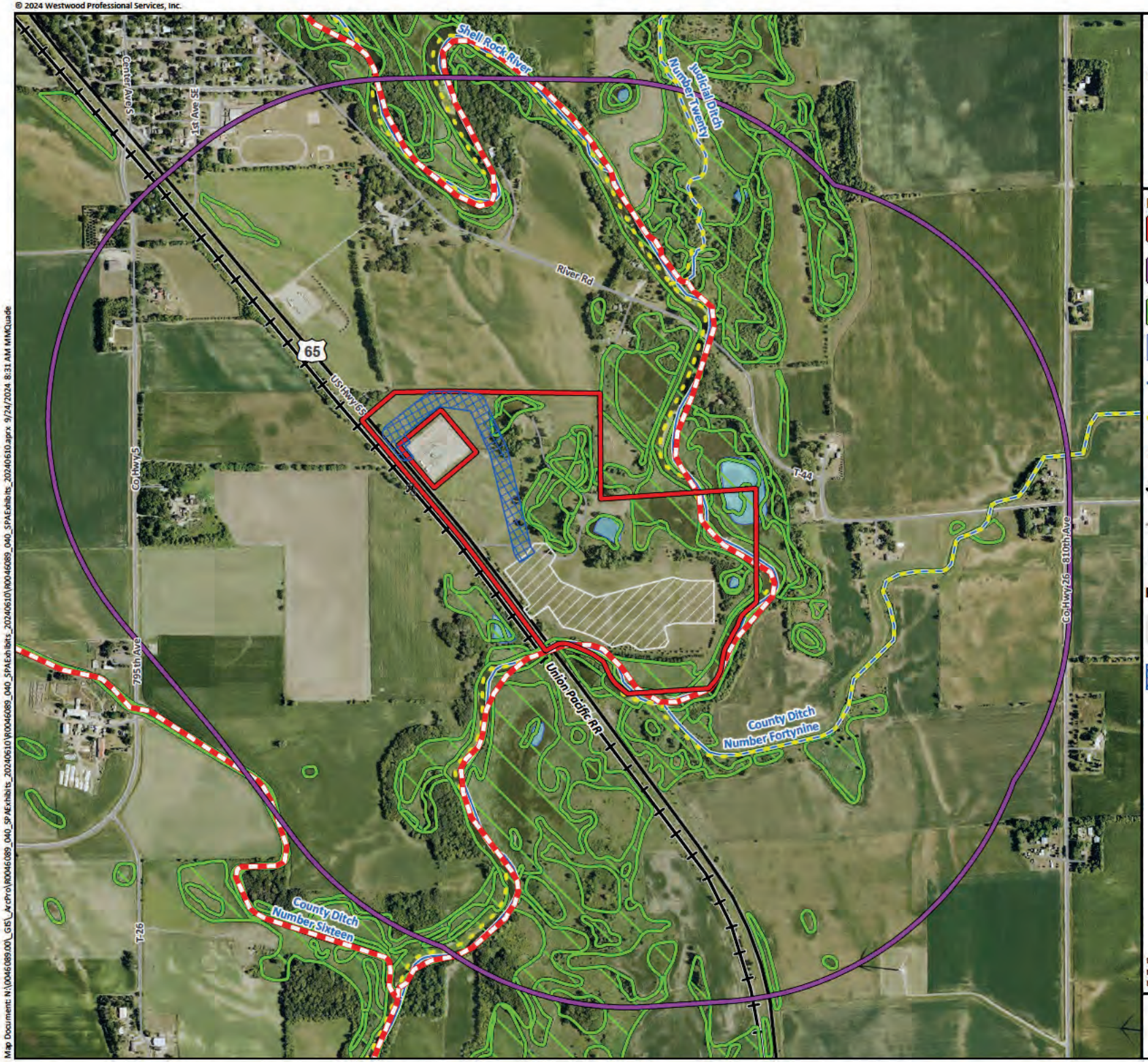

Westwood

Midwater Energy Storage Project
Shell Rock Township,
Freeborn County, Minnesota

Surface Waters

Figure 8 (September, 2024)

Legend

- Project Area
- Project Area Half-Mile Buffer
- NWI Wetland
- NHD Waterbody
- NHD Flowline
- PWI Watercourse
- Impaired Waterway
- Major Road
- Road
- Railroad

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed HVTL Facility & Project Development Area

Data Source(s): Westwood (2024); NAIP (2023); NWI (2023); NHD (2024); PWI (2024); EPA (Accessed 2024); U.S. Census Bureau (2021 & 2023).

N

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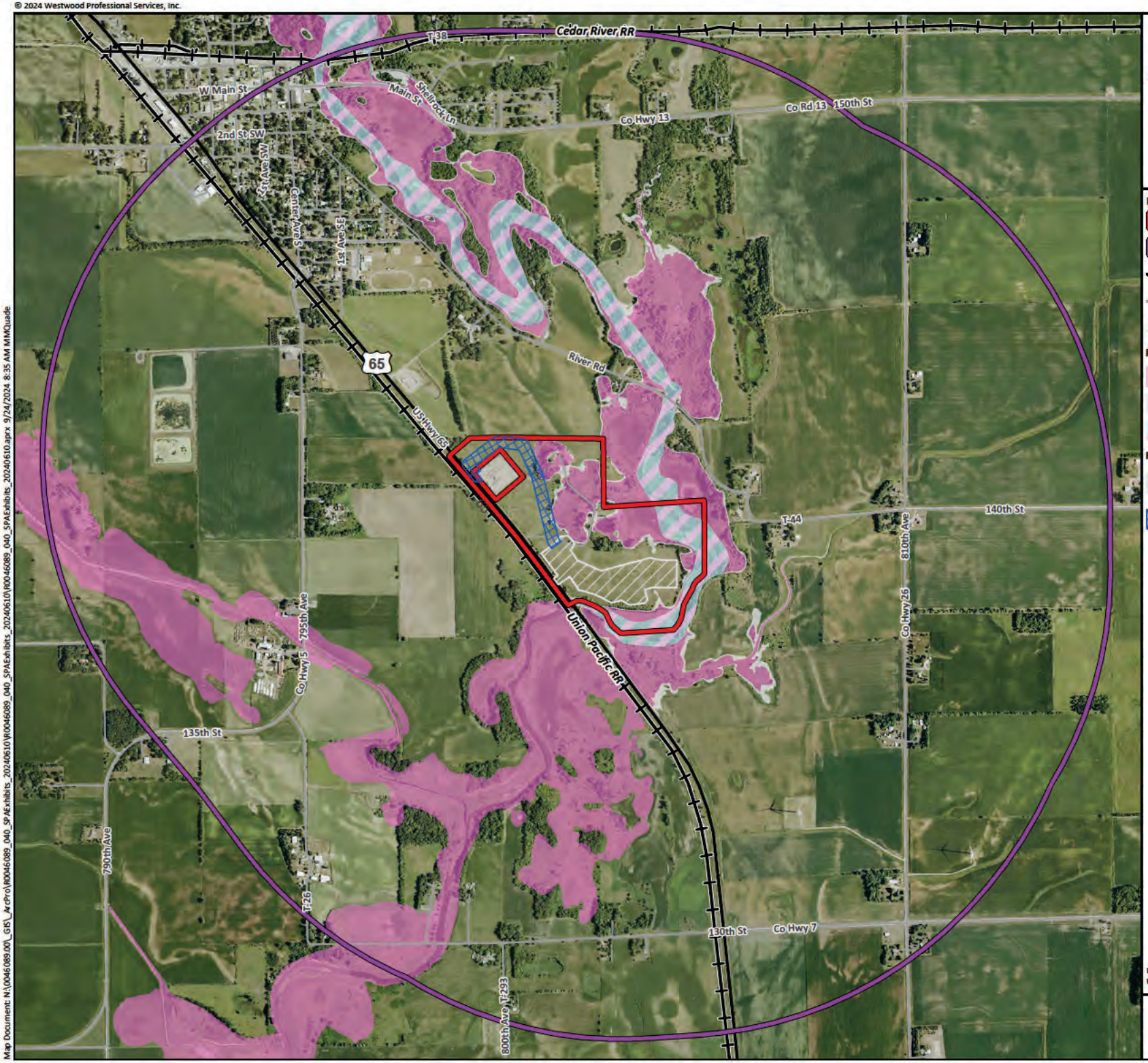

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Floodplains

Figure 9 (September, 2024)

Legend

- Project Area
- Project Area 1-Mile Buffer
- Major Road
- Road
- Railroad

FEMA Flood Zone

- 100-Year Floodplain
- 500-Year Floodplain
- Floodway

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed HVTL Facility & Project Development Area

Data Source(s): Westwood (2024); NAIP (2023); FEMA (2024); U.S. Census Bureau (2021 & 2023).

N

0 1,700 Feet

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Wetlands Map

Figure 10 (September, 2024)

Legend

- Project Area
- Field Delineated Wetland
- Field Delineated Pond
- Field Delineated Watercourse
- Existing Transmission Line
- Existing Distribution Line
- Existing Substation
- Major Road
- Road
- Railroad

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed HVTL Facility & Project Development Area

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2021 & 2023); HIFLD (2022 & 2024).

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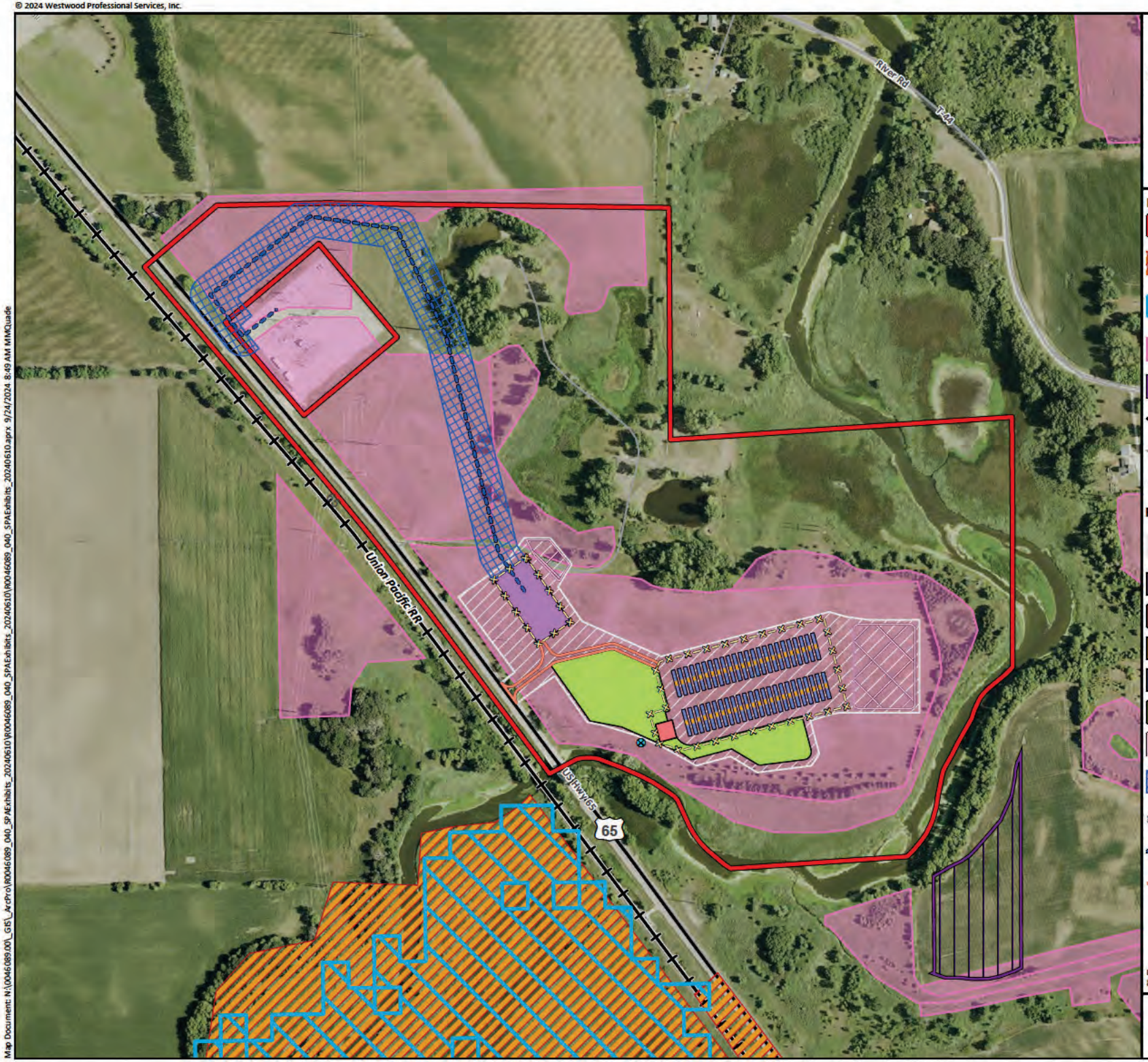

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Midwater Energy Storage Project

Shell Rock Township,
Freeborn County, Minnesota

Unique Natural Features

Figure 11 (September, 2024)

Legend

- Project Area
- MNDNR MBS Sites of Biodiversity Significance
- MNDNR Regionally Significant Ecological Area (RSEA)
- Conservation Reserve Program (CRP) Land
- RIM Easement
- Major Road
- Road
- Railroad

Proposed Site Features

- Proposed BESS Facility & Project Development Area
- Proposed Substation
- Proposed O&M Facility
- Proposed Auxiliary Transformer
- Proposed BESS Unit
- Proposed Laydown Yard
- Proposed Basin Area
- Proposed HVTL Facility & Project Development Area
- Proposed Fence Line
- Proposed Tap Line
- Proposed Access Road
- Proposed Leach Field

Data Source(s): Westwood (2024); NAIP (2023); MNDNR (2006 & 2024); MNBWSR (2024); CRP (2007).

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Appendix B – Advisory Task Force charge

In the Matter of the Joint Application of Midwater BESS, LLC for a Site Permit and Route Permit for the up to 150 MW Midwater Energy Storage Project and Associated 161 kV Transmission Line in Freeborn County, Minnesota

Advisory Task Force Establishment and Charge
PUC Docket Nos. ESS-24-294, TL-24-295

ADVISORY TASK FORCE ESTABLISHMENT, CHARGE, AND ORDER

The above-noted matter has come before the Commissioner of the Department of Commerce (Department) for a decision on the establishment of an advisory task force to advise the Public Utilities Commission (Commission) on Midwater BESS, LLC's (Midwater) combined site and route permit application for a proposed 150 megawatt (MW) alternating current (AC) battery energy storage system (BESS) and 161 kV High Voltage Transmission Line (HVTL) and associated facilities.

As authorized by the Commission, the Commissioner is establishing an advisory task force to assist in identifying additional viable sites or routes, impacts, and mitigation measures that will be evaluated in the environmental assessment (EA) to be prepared by the Department for the proposed Midwater project.

Advisory task force members will be solicited from the following governmental units:[1]

- A member of the Freeborn County Board of Commissioners or their designee;
- A member of the Shell Rock Township Board or their designee;
- A designee of the City of Glenville;
- The Fire Chiefs of Glenville and Albert Lea or their designees;
- Freeborn County Emergency Manager or their designee;
- A designee of the Glenville-Emmons School Board;
- A designee of Shell Rock River Watershed District;
- A designee of labor unions appointed by the Executive Secretary after consultation with the IBEW local having jurisdiction over the area, the International Union of Operating Engineers Local 49, and the North Central States Regional Council of Carpenters;
- A representative of ITC as owner of the substation; and
- A member of the Albert Lea Economic Development Agency or their designee.

[1] Commission Order Establishing Citizens Advisory Task Force, June 2, 2025, eDockets Number 20256-219493-01.

The advisory task force will consist of up to 11 members. As authorized by the Commission, the Department herein charges advisory task force members to pursue the following actions:[2]

1. Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied;
2. Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives;
3. Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility;
4. Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties; and
5. Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services.

Advisory task force members will be expected to participate in up to three meetings and to assist Department staff and its contractor with the development of a summary of the task force's work.

The advisory task force will expire upon issuance of the EA scoping decision for the project.

THE COMMISSIONER MAKES THE FOLLOWING ORDER:

WHEREAS, Midwater submitted a combined site and route permit application for a 150 MW BESS and 161 kV HVTL on November 19, 2024; and

WHEREAS, Minnesota Statute 216E.08 provides for the establishment of an advisory task force to assist the Commission in carrying out its duties; and

WHEREAS, in its Order of May 22, 2025, the Commission authorized the Department to establish an advisory task force and develop a structure and charge for the advisory task force; and

WHEREAS, Minn. Stat. 216E.08 establishes that an advisory task force comprise at least one representative from each regional development commission, county, and municipal corporation, and at least one town board member from each county in which a site or route is proposed to be located; and

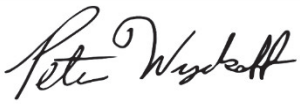
WHEREAS, the Project is not located within a regional development commission.

[2] Id.

THEREFORE, the Department herein establishes an advisory task force for the Midwater project, authorizes Department staff to appoint members of the task force, and adopts the above determination with regard to its structure and charge.

Signed this 18th day of June 2025

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE



_____
Pete Wykoff, Deputy Commissioner

Appendix C – Advisory Task Force meeting #1 agenda, slides, and meeting minutes

MINNESOTA
PUBLIC UTILITIES COMMISSION

Midwater Battery Energy Storage System Project Task Force

Meeting #1
July 24, 2025
10:00 a.m. to 1:00 p.m.
Freeborn County Courthouse
411 Broadway Ave S, Albert Lea, MN 56007

AGENDA

	Activity	Time
1.	Welcome and agenda review	10:00 a.m.
2.	Introductions	10:10
3.	Why we're here	10:20
4.	Work of the task force	10:50
5.	Project overview	11:05
	BREAK	
6.	Identification of impacts and issues	11:35
7.	Next steps	12:50 p.m.
8.	Adjourn	1:00 p.m.

Thank you

Project Task Force Meeting #2	Friday, August 22, 2025 10 a.m. - 1 p.m. Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007
Project Task Force Meeting #3	Tuesday, September 16, 2025 11 a.m. - 2 p.m. Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007

MINNESOTA
PUBLIC UTILITIES COMMISSION

Project Task Force
Midwater Battery Energy Storage System

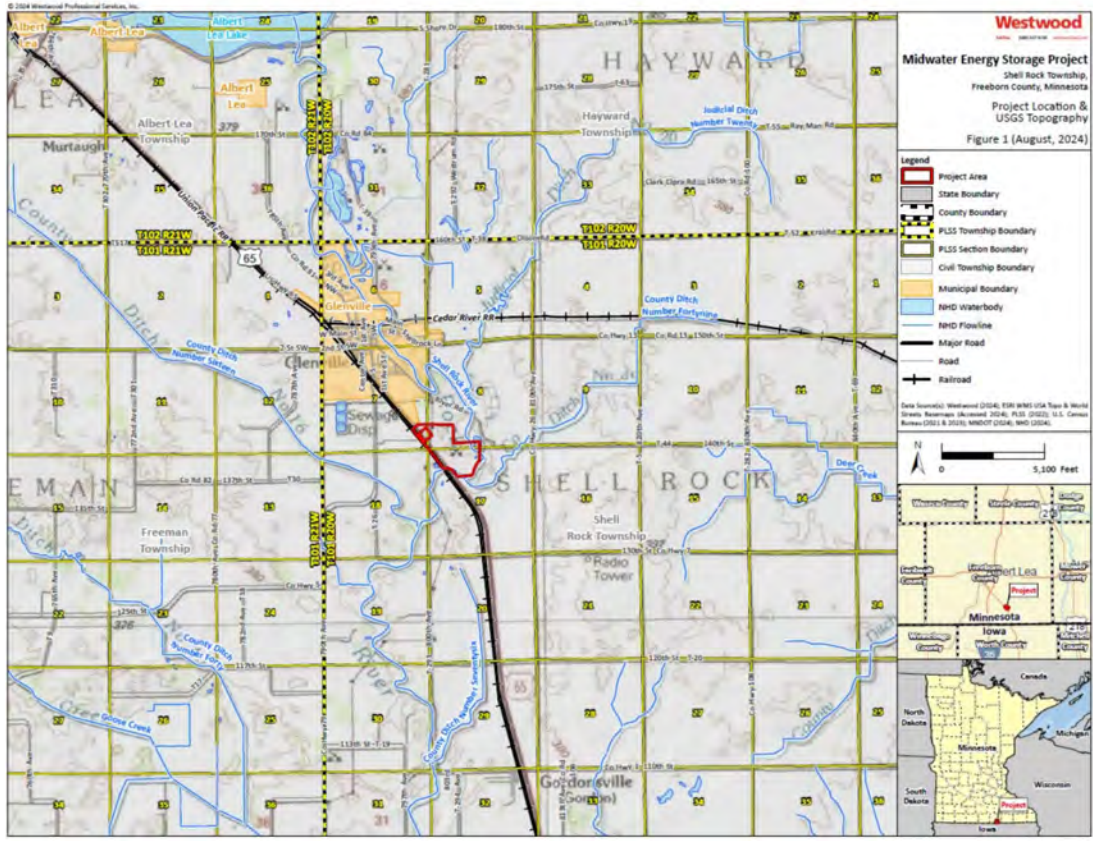
July 24, 2025

	Activity	Duration (minutes)	Start Time
1	Welcome and agenda review	10	10:00 AM
2	Introductions	20	10:10 AM
3	Why we're here	20	10:30 AM
4	Work of the task force	15	10:50 AM
5	Project overview	20	11:05 AM
	Break	10	11:25 AM
6	Identification of impacts and issues	75	11:35 AM
7	Next steps	10	12:50 PM

Introductions

- Name
- Organization
- Role or responsibility at your organization
- What is your favorite summertime activity?

Proposed BESS Project



- Project proposed by Midwater BESS LLC, a subsidiary of Spearmint Renewable Development Company LLC
- 150-megawatt battery energy storage system (BESS) in Shell Rock Township, Freeborn County, Minnesota
- A 2,668-foot long 161 kV high voltage transmission line (HVTL) will connect BESS to the electrical grid

Required Approvals

In order to construct and operate the project, the applicant must obtain two approvals from the Minnesota Public Utilities Commission (MPUC)

- a site permit for the 150-megawatt (MW) BESS to be located in Freeborn County
- a route permit for the 161 kilovolt (kV) transmission line to be located in Freeborn County

Site and Route Permit – Alternative Process Review

BESS Facility and HVTL Route Permit

In making a decision, the Commission considers factors listed in rule and statute (Minnesota Rules 7850.1000 to 7850.5600 and Minnesota Statutes Chapter 216E).

Generally, factors include:

- Conserve resources and minimize environmental impacts
- Minimize human settlement and other land use conflicts
- Ensure an efficient, cost-effective, and secure power supply and electric transmission infrastructure.

Minn. R. 7850.1000 to 7850.5600 and Minn. Stat. 216E

Public Utilities Commission

Energy Infrastructure Permitting (EIP)

- Act as technical advisors to the Commission
- Provide neutral, third-party analysis of potential human and environmental impacts
- Do not advocate
- Goal is informed decision-making by the Commission

Environmental Review

Energy Infrastructure Permitting (EIP) will prepare an Environmental Assessment (EA)

- Objective Analysis of the Project
  - Discuss and Analyze Potential Impacts
  - Identify Strategies to Avoid and Mitigate Impacts
  - Does not Advocate – Just the Facts
  - Provides decision-makers with information to make an informed decision

Developing the EA

Scoping focuses the EA on the most relevant information. Public input helps define:

- Potential human and environmental impacts to be studied
- How the project can avoid, minimize, or mitigate potential impacts
- Identifying alternatives that mitigate potential impacts
- What unique characteristics within the project area should be considered?
- Specific permit conditions for consideration

Work of the Task Force

Task Force examine and make recommendations on the following:

1. Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied

2. Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives

3. Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility

4. Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties

5. Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services

Work of the Task Force

The Task Force is not created to analyze any specific other sites at other substations in the southeast region. The Commission is well equipped to analyze those sites for purposes of an ultimate permit decision through the environmental assessment. Parties and participants active in the Task Force are free to make separate comments through their governmental units or organizations on other sites identified in the record, but it is not in the scope of the Task Force.

Issues Outside Task Force Work

- **Legal questions pertaining to**:
  - Eminent domain
  - May be other items that arise during task force work
- **Discussions of substations besides the Glenville location:**
  - The Task Force is not able to discuss alternatives to this location.

Work of the Task Force

- **Roadmap**
  - Meeting #1 – July 24, 2025: Review project and process; identify issues and impacts to be analyzed in environmental Assessment (Charge 2-5).
  - Meeting #2 – August 22, 2025: Discuss issues and impacts (Charge 2-5); identify mitigation measures; identify viable alternatives (Charge 1).
  - Meeting #3 – September 16, 2025: Discuss viable alternatives (Charge 1); discuss mitigation measures (Charge 2-5); discuss task force report; wrap-up.

Background

Nov. 2024
Application
submitted

January 2025
Application
accepted

February 2025
Public information
and scoping meeting

June 2025
Advisory Task
Force ordered

10 Minute Break

Identification of Impacts and Issues

- Conversation Café
  - Group Agreements
    - Suspend judgement as best as you can
    - Respect one another
    - Seek to understand rather than persuade
    - Invite and honor diverse opinions
    - Speak what has a personal heart and meaning
    - Go for honesty and depth without going on and on and on
- Process (4 rounds)
  - Round 1 and 2
    - Share
  - Round 3
    - Conversation
  - Round 4
    - Reflect

Next Steps

- Next Meeting

Meeting	Date/Time
Meeting #2	Friday, August 22, 2025
	10 a.m. - 1 p.m.
	Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007
Meeting #3	Tuesday, September 16, 2025
	11 a.m. - 2 p.m.
	Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007

- Homework
  - Prepare for mitigation measures identification and viable alternatives identification

MINNESOTA PUBLIC UTILITIES COMMISSION

Midwater BESS Project Task Force

July 24, 2025

Task force members: Nicole Eckstrom, Jeff Fields, Mike Frank, Adam Hamberg, Jacques Harvieux, Andy Henschel, Tim Kaasa, Tom Kaiser, Jeff Laskowske, Mike Lee, Dan Pfeiffer, Rich Murray, Jim Sullivan, Javier Whitaker-Castañeda

Attendees: Trevor Bordelon (Freeborn County Environmental Services Organization), Courtnay Lenz (Good Steward Consulting), Mary Matze (Spearmint)

Task force members not in attendance: Melanie Aeschliman, Wes Webb

Presentation

- Tom Kaiser: kicks off the meeting. Does a broad overview of the meeting agenda.
- Task force member introductions.

Proposed BESS Project (Tom Kaiser)

- Project proposed by Midwater BESS LLC, a subsidiary of Spearmint Renewable Development.
- Connecting a facility like this to the existing electrical grid is a key component of the project.
- The applicant must obtain two individual approvals from the Minnesota Public Utilities Commission (PUC): a site permit for the BESS, and a route permit for the transmission line.
- Timeline of permit approvals: applications have been submitted; we are going through the public scoping and the comment period. Now we are at the Advisory Task Force phase. We will help the PUC identify concerns and make decisions based on those concerns.
    - When our work concludes, we move on to the next steps of the permitting process including a public hearing and comment period, then a report from the administrative law judge.
- Dan Pfeiffer: Not every project has a task force, it's based on the scoping of the project or if it's requested by local parties. The PUC has authorized a task force for this project.

- Tom Kaiser: The PUC considers a very specific list of factors that are listed in Minnesota Rules 7850.1000 to 7850.5600 and Minnesota Statutes Chapter 216E.
    - Conserve resources and minimize environmental impacts.
    - Minimize human settlement and other land-use conflicts.
    - Ensure an efficient, cost-effective, and secure power supply and electric transmission infrastructure.
- Zan Associates has no affiliation with the project. We are here to facilitate so the project doesn't veer outside of the scope, and that everyone's concerns are heard.
- Jim Sullivan: During the permitting process, Energy Infrastructure Permitting Process (EIP) staff serves as the PUC's technical advisor and shepherds the project through the different permitting gates. We're not here to decide which projects get approved. We decide if we have the right scope, or if we missed something. The PUC authorized this task force, information from task force will inform the scope of the environmental assessment (EA) for the project.
    - Tom Kaiser: Is it the size of the project that drives the task force?
    - Jim Sullivan: No, it's based on whether the PUC sees a need for it based on land use, environmental factors, other factors. Or the PUC can ask for more information and wants the community to be involved in that. The goal is a better-informed scope, a better EA.
    - Jacques Harvieux: It's unusual to assign a task force at this point of the process, usually it's at the application phase.
    - Tom Kaiser: Zan will create a summary report that covers everything that we discuss in the task force, something tangible as a result of these meetings.
    - Dan Pfeiffer: The goal isn't consensus. We draft a report, allow task force members to comment on the report, and include those comments in the final report.
- Tom Kaiser: The environmental review process is key. It includes an objective analysis of the project, looking at potential impacts, and looking for strategies to mitigate impacts. The review does not advocate, just examines the facts. Goal: to give decision makers more information that they might not have, specifically local information.
- Public info helps define:
    - Potential human and environmental impacts to be studied.
    - How the project can avoid, minimize, or mitigate potential impacts.
    - Identifying alternatives that mitigate potential impacts.
    - What unique characteristics within the project area should be considered?

  - Specific permit conditions for consideration.
- Task force to examine and make recommendations on the following:
  - Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied.
  - Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives.
  - Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility.
  - Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties.
  - Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services.
- Tom Kaiser: The task force is not here to analyze any other substations in the southeast region. Members of the task force are allowed to leave public comments through other avenues.
  - Jim Sullivan: The Commission is a quasi-judicial body. We have to present our deliberations back to them based on their decision-making criteria. Three of the items that the Commission asked the task force to evaluate are specific to permit considerations. We give the Commission what they ask for.
- Tom Kaiser: Some things are outside of the work on the task force: eminent domain, other legal questions, and discussions of substations besides the Glenworth location.
- Task force roadmap: Meeting 1 – Review the project, identify some initial issues and impacts. Meeting 2 – Issues and impacts, identify mitigation methods. Meeting 3 – Viable alternatives, discuss task force report. There will be items task force members want an answer to or want to comment on.
- Background timeline:
  - November 2024: Application submitted.
  - January 2025: Application accepted.
  - February 2025: Public information and scoping meeting.
  - June 2025: Advisory task force ordered.

MINNESOTA
PUBLIC UTILITIES COMMISSION

Discussion Section

- Tom Kaiser: reviews task force group agreements.
- Dan Pfeiffer: explains the digital whiteboard and the rounds of conversation café.
- Tim Kaasa: For the township in south central area, the river is a concern of our constituents. Some of our concerns include the closeness to rivers, light soil, and groundwater contamination. For the downstream folks, the flow of the water into Iowa is also a concern. All the land around it is in the Department of Natural Resources (DNR) program, so it would have to come out of the DNR program for the BESS to go in. Other concerns include proximity to locations, noise pollution, and changing the location of future use of the land. Some main issues are river proximity and light soil. Also, the school location is just north of the site and could be at risk if there are thermal runaway issues. The location is not the safest from an environmental perspective or a human perspective. There are other locations that have different soil types.
- Nicole Eckstrom: I don't live in Glenville, but I am on Freeborn planning commission. How would these facilities impact taxpayers' quality of life? Water contamination is a concern. I want to emphasize this concern about the soil, and proximity to the flood plain. For example, the runoff from the facility into the waterways. This is a high priority for me as Commissioner and as a resident. People are dependent on well water. My other concerns include off-gassing in proximity to community, potential noise impact, proximity to wildlife areas and residents' homes, protection of our emergency services—we also deal with volunteer fire fighters and volunteer responders so they may need additional training at significant expense for new equipment. The cost of contamination is a concern—Freeborn County has had other industries that have contaminated, and the city is still waiting for grants to clean those problems up. The costs fall to the taxpayer, impacting property values.
- Mike Lee: My main concern is the closeness to the river. For the stormwater ponds that are around it, we need some way to prevent runoff during heavy rains. The layer of coolant needs to go into a rock system and have a barrier below to prevent leaking into groundwater. Some of my other concerns are the closeness to the school and new training for the fire department. We need to look out for the people who live there and do not want to undo the work that the watershed district has done so far with the $30 million cleaning up by Albert Lea already.

- Andy Henschel: For Shell Rock River, there are ways to address concerns such as proximity to river, stormwater, sandier loam soils in the area, groundwater, and potential leaching to the river. One of the biggest questions is the decommissioning of the site. Oftentimes the locals get stuck with these costs, so could we introduce bonds to address that?
- Mike Frank: I want to see an overall site plan. The battery storage systems have to meet the national fire code. We need to protect the Glenville substation. What are the measurements of the setback of the facility…what about wind? We should look at a sitemap to mitigate concerns. For the generator interconnections, someone on ITC staff does this work. Another ITC staff member is an expert in noise and setbacks.
- Rich Murray: I want to identify what we are doing, what are the concerns? Are they real or perceived? Are we seeing these facilities in other locations across the country? What are the issues that other sites have run into? We can identify concerns by seeing how other areas have handled them. Is the system safe? Who's liable for any problems with the facility? Is there any liability for the city or county down the road?
    - Nicole Eckstrom: Tying into the EA, are we out of the scope for liability and clean up? The liability is going to be limited if we have rock solid environmental policies to mitigate that up front. If we can learn from other facilities and potential hazards, we can minimize them.
    - Jacques Harvieux: The task force doesn't have to come up with an alternative site. If we do not come up with an alternative, the EA will evaluate solely the proposed project, and the Commission will only consider that project.
    - Jim Sullivan: The task force needs to communicate the alternatives if they want the Commission to evaluate multiple options.
    - Nicole Eckstrom: If we can't offer an alternative site, what alternative can we offer to the Commission?
    - Jim Sullivan: You can talk about alternative *sites*, not alternative facilities.
    - Jacques Harvieux: The state won't offer an alternative on anyone's behalf.
    - Dan Pfeiffer: If we get through issues and impacts, we can start the discussion of alternatives today. The substation is the fixed point.
    - Jacques Harvieux: The substation is already built, that is not a project we can evaluate.

  - Nicole Eckstrom: Does the task force propose a specific setback; do we need to find landowners willing to sell…what is our scope?
  - Jacques Harvieux: As narrow as you can make a proposal, the better. If you have identified land and a homeowner willing to sell, it's better.
  - Dan Pfeiffer: A more specific alternative means more details can be developed in the EA. The EA can dive deeper into the impacts with a more specific location.
  - Jim Sullivan: The Commission wants to know if there is actual geography that I can consider for an alternative site. They can't evaluate vague sites as they need those boundaries. If there are better suited parcels of land in your mind, we should have that conversation.
  - Nicole Eckstrom: The three meetings are going to go quickly; we don't all have expertise on where other sites could be. We don't have that knowledge right now. I also don't know what that storage system requires to run, like how many miles of transmission, etc.
  - Jim Sullivan: Great question about the role of the task force. The Commission doesn't want technical expertise; they want your knowledge and how it aligns with this project. We can make sure that technical information is available.
  - Jacques Harvieux: That's the point of the EA; it will do the technical evaluation.
  - Dan Pfeiffer: One of the task force homework assignments is to think about that and develop those questions. I will keep track of the questions so that the technical experts can weigh in on that. For example: "What about this space?" We should bring in viable alternatives to a map.
  - Jacques Harvieux: The more detail you can provide is better, detail the questions you have, the technical knowledge that you want to learn more about.

- Tim Kaasa: Does any of this go up to the legislature? Is it our duty to talk to our representatives to take a look at this?
  - Jacques Harvieux: It's all based on initiative.
  - Jim Sullivan: For this project, the task force findings are to support the decision that the Commission makes. A legislator could pick this up as a statewide issue. We as Commission staff aren't going to take it to the legislature. The task force report will be public and could be used by legislators.

  - Jacques Harvieux: A state agency could create a working group, although I haven't heard of one for this topic.
  - Tim Kaasa: Are there are any BESS in Minnesota right now?
  - Jim Sullivan: Other BESS projects are in the permitting process in Minnesota. Colorado Springs, Colorado has a few of them. Most people don't know what they are but there is an operational history.
  - Mary Matze: There are some in Minnesota co-located with other generation facilities, currently under construction.

- Mike Frank: The EA for the Snowshoe BESS, is it public?
  - Jim Sullivan: The snowshoe EA is done; it is public. Our Midwater BESS project does not have a final scope. This task force will help complete that, then the EA will be drafted. There is lots of environmental information in the permit application.
  - Mike Frank: I recommend that the county reads that Snowshoe EA.
- Mary Matze: The Midwater BESS application submitted in 2022 is specific to the Glenworth substation. We can move the project, but we would need additional transmission infrastructure. We cannot connect to a new line because that would drop us out of the queue. Any new location requires transmission infrastructure.
  - Mike Frank: Midcontinent Independent System Operator (MISO) is the regional transmission planning organization that coordinates future transmission infrastructure.
- Andy Henschel: When you're looking for alternatives, would battery type be a potential alternative? I assume this project is lithium. Sodium-ion is an emerging technology, its toxicity is low, thermal runway low, and low fire risk and is better for the environment. Is that an alternative?
  - Dan Pfeiffer: That can be a question we give to the applicant. We can discuss that and include that in the report.
  - Jim Sullivan: Explains the difference between system alternatives vs site alternatives.
  - Andy Henschel: It doesn't matter how far it is from the river if there's an issue, there's still contamination. We need system alternatives we can look at.
- Jeff Fields: IBEW, labor organization. We usually don't get into environmental concerns. Midwater BESS will be built to the highest standards if IBEW builds it.
- Jeff Laskowske: Is this facility being built in multiple buildings? From the fire side, there's really no concerns. We've dealt with this at Albert Lea. If we have an event, is there someone who can be a technical expert in attendance?

- Adam Hamberg: Lots of my concerns might be debunked. Here are my emergency management considerations:
    - How quickly can we remove people for school evacuations. We have a school 8,000 feet away from it. Maybe it's not an evacuation, maybe a shelter in place? Maybe nothing? 120 kids attend the high school, 130 at the elementary school.
    - In the event of evacuation, Glenville has no bus drivers and response time from Albert Lea is long.
    - Evacuation sites for schools are north of the schools, by downtown. Could kids go on foot? What would the evacuation distance be? I want more knowledge on that.
    - What is the fallout from the wind direction during emergency? If there was a fire, would US 65 close? Would we have to shut down Union Pacific Railroad?
    - Native American grounds and artifacts are near the site. Has that been evaluated?
    - Who are our contacts to ask questions and have training for fire departments and contacts after the structure is built? There are 18 volunteer fire fighters in Glenville, one ladder truck, two engines, one tender truck, one brush truck. Albert Lea Fire Rescue responds quickly.
- What about the substation west of Hayward and 46? Can we look at that alternative?
    - Mike Frank: That might be outside of our scope. Functionality would be different. The connection point has to be in Glenville.
    - Adam Hamberg: That substation might be less contentious.
- Tim Kaasa: Evacuation would fall on the 18 volunteer fire fighters. There are probably 5-7 volunteers on duty on any given day. I read through the DNR statements, something like this is new. I read the Snowshoe BESS report, and they asked for higher fences and lights to point down at the facility. I see the DNR as somewhat disappointing, they should've been more involved in protecting the land ahead of time.
- Nicole Eckstrom: I like the tetherball example. What is the distance of the tetherball?
    - Dan Pfeiffer: We might not answer that now, I noted that to ask the experts.
    - Nicole Eckstrom: Does this get pushed further out, away from residential and away from river. I'd look at a map to find a specific location. Let's look at

the wastewater treatment plant. If the city already owns the land, can we move the BESS facility there to generate income for the city? Can we move it to an industrial park? Not next to a river, property values fit more into an industrial scope. Another alternative technology is salt batteries. Are there negative impacts from other batteries? Salinity in water? Can we have it not right on the river, right by the school? Let's put it into an industrial area. Or somewhere with access to a full-time fire department?

  - Rich Murray: Let's get our tetherball length first before looking at other areas.
  - Jim Sullivan: We can try to bring a graphic of that before the second meeting.
  - Nicole Eckstrom: What prevents Spearmint Energy from giving false information to the task force? What if I'm looking out for the community 15 years after a catastrophe and contamination. Why wouldn't they protect their investment?
  - Dan Pfeiffer: I will phrase the question it as "what distance would be technically feasible?" They have a good understanding of what that would be.
  - Jim Sullivan: And we can ask for a rationale for that distance.

- Mike Lee: The proposed site has proximity to a public hunting area right across the road. In 2026 they're thinking about making Southern Minnesota a rifle zone. What's the protection for these batteries right next to a hunting area? What's the setback from the ROW? I read about new "Hesla" battery technology that might be safer. Between Glenville and Gordonsville there's a junkyard, would that be a spot that would work as a potential alternative?
- Andy Henschel: I hate to give alternates without a resolution, talking about battery type is important. That could relieve concerns. Can we add monitoring wells to look at leaching to the river or drinking water? Monitoring wells installed by a third party to let us know of potential concerns. If there is a runway and we need to cool the system, biochar filters in stormwater ponds or lined under the entire site and includes maintenance. If it's fire suppression, is there storage for that suppression that contains heavy metals? Could we take water from the river to help fight warming during fires? With the spacing of the containers, can we increase the distance between buildings? We should have a third-party monitoring of the storm water and in tasked with clean up or decommissioning. Put an escrow or bond in place prior to applicant leaving.
- Mike Frank: There are lots of unknowns on the fire portion. Does Spearmint have information about fire safety?

  - Dan Pfeiffer: I will bring that question and share slides or information about fire safety.
  - Jim Sullivan: The permit application describes construction contingencies, including air modeling in case of a fire. Fire Marshals can do real-time monitoring for evacuation or setback by looking at wind patterns.
  - Jacques Harvieux: Spearmint said in the application that if there is thermal runaway, let it burn. Spacing mitigates the spread of fire. From the PUC, a decommissioning plan is a required part of the permit. The financial assurance part is included. With regard to that part of the project, anybody can submit comments about how they want to see that financial assurance. You can propose, for example, to see them purchase a bond for the decommissioning.
  - Dan Pfeiffer: PUC can set permit conditions. If they set a condition for one permit, others may choose to include it unprompted. Future developers review prior permits so that they can connect to future plans.
- Jeff Laskowske: For smaller facilities already in Albert Lea we've done study and research and there was no need for additional firefighting equipment. We would follow National Fire Protection Association (NFPA) Code 55, spacing in the boxes of the facility. We can keep neighboring buildings cool during fire in case wind moves. Air conditioning is important. For battery types, these are lithium-iron. Two completely different technologies. We haven't seen a thermal runaway from lithium-iron yet. As far as firefighting goes, there isn't any fire department in our county that can't handle it. There is minimal water runoff, no concern of evacuation. In the unlikely case of fire, schools would be sheltered in place. There is more concern for vulnerable populations. We've done a lot of research. The state has funded firefighting training so there is no real additional cost besides time, hauling water, and having volunteer firefighters on site. A more likely emergency response than a fire is that a BESS employees could get hurt on site. Is there someone at the facility that can help us get in? We can provide facility staff with pre-plans and training. Chief Webb trained with us. Does the battery technology deteriorate over the years? I'm not worried, we'd just let the fire burn out.
  - Tom Kaiser: How long does the burning out take?
  - Jeff Laskowske: Most boxes are about the same. It depends on how they're packed. There is separation inside the box to slow the thermal runaway. We haven't had a lithium-iron facility go up yet. Lithium-ion batteries have gone

up. We have more knowledge, and the technology is new and is significantly different from an EV battery.
    - Mary: The manufacturer sets the battery on fire during testing for PUC. We can bring data from a burnt husk from the manufacturer.
- Jeff Laskowske: To address air quality issues, Rochester and Mankato has monitoring systems for hazardous air. We do have regional technology to help us out, but it would take about an hour to get them on site. Plume modeling can be done right away.
    - Andy Henschel: To fight lithium-iron fires, you don't use water. But you use water on surrounding ones to keep them cool. Wondering if there is heavy metal runoff. The water still has the potential to pick up heavy metals from the plume. The biochar filters would contain those heavy metals.
    - Jeff Laskowske: Anything we knock down will go into the soil. We'd put a thermal imager on the burning box, wait for cooling, reduce potential contaminants.
    - Nicole Eckstrom: What if this is by the wastewater facility? Could we filter out heavy metals?
    - Andy Henschel: Those facilities are for nitrogen, phosphorus, and bacteria, not for heavy metals.
- Dan Pfeiffer: Lots of talk about the river. Should we talk about stormwater?
    - Andy Henschel: Light sandy soils have a high saturation rate into the groundwater. We send a larger storm event through a (Storm Water Pollution Prevention Plan (SWPPP), with increased storage area and a skimmer on it. We could have biochar socks within the skimmers, there's lots of things you can do.
    - Nicole Eckstrom: I went to the Dakota Prairie composting site, and they have collection ponds. Regardless of where this BESS is, we would need to collect that runoff before it goes into water.
    - Andy Henschel: We need to get the right information. It's human nature to think of the worst-case scenario. There's almost 600 of these BESS systems in the US, runaway issue is 0.2%, 1 out of 600 systems maybe? It's good for us to think of the worst-case scenario and try to minimize impact. It's about getting the right information to the people.
    - Adam Hamberg: How many of these are built on a river?
    - Tom Kaiser: Is the river location incidental or is there a benefit for the applicant?

  - Jim Sullivan: From the PUC side, no; the location is incidental. There's nothing that warrants a water body next to a BESS.
- Dan Pfeiffer: Here are the questions I will bring to the technical experts for future discussion: potential mitigation measures, length of the tetherball, information on fire safety, information on stormwater runoff. Are there other questions?
  - Mike Frank: Can we see a site plan?
  - Jeff Fields: Layout of the site itself, to see the self-contained structures.
- Tim Kaasa: Is stormwater management the state's charge?
  - Jim Sullivan: Yes, up to the state. The PCA sometimes requires more. Sensitivity to water or changes in rainfall. They're not going to make the standards less rigid.
  - Tim Kaasa: I tend to see the minimum stormwater management and pollution control. The PCA tends to be more reactive than preventative.
  - Jacques Harvieux: I can't speak for every agency's actions. The most that any agency is going to do is at least give a minimum of what they see on the site plan. They are going to give the standard requirements to any facility of this size: wind farm, solar, etc.
  - Jim Sullivan: The PCA does not have a citizen's board. The letter you saw in the record is the environmental review group. There are other groups, the stormwater management group that we work with directly. They're the group that has to tailor the criteria to meet needs that generic standards wouldn't meet.
  - Jacques Harvieux: MPCA is more active in terms of starting initiatives. You can reach out to them. For example: I work on solar decommissioning.
- Andy Henschel: Every construction site needs a SWPPP plan. Which include the number of acres of site, square footage of impervious surface. The BESS is no different than others. This site is unique because it doesn't have a ton of permeable surface. Having the knowledge is important, such as how much runoff is there?
  - Dan Pfeiffer: We can ask about runoff solutions.
  - Andy Henschel: A biochar liner will suck up any metal that gets through. Maintenance occurs every 5-7 years and it requires disposal if there's an incident.
  - Mike Frank: Site plan should address that: soil types and compaction standards. That's standard industry wide.
  - Andy Henschel: That soil type is everywhere by the river.

- Andy Henschel: For nearby burial ground, can we have a heritage review with the EA?
    - Jim Sullivan: There is nothing on the registry. Ho-Chunk nation we've been in contact with. A shovel archaeological test has been done, looking for cultural resources, nothing was found in the area that they examined. We don't make exact locations/information public because of treasure hunters.
    - Mike Frank: Does PUC have a mitigation plan if cultural things are discovered?
    - Jim Sullivan: An unanticipated discoveries plan is typically a standard permit condition; it would be used if cultural resources are found.
- Dan Pfeiffer: Aesthetics didn't come up yet. Have you seen drawings of the plan?
    - Tim Kaasa: A lot of people hunt in that area as well as eagles nesting, cranes nesting, so 24/7 noise for wildlife and ethanol plant hums are a concern.
    - Dan Pfeiffer: We can ask the question about noise. We'll ask about air conditioner noise.
    - Nicole Eckstrom: Is this a meeting where we say, "there needs to be noise mitigation?" We need to realize the size as this isn't just one or two units in a residential neighborhood. Brainstorming the future of this with other big entities that come into Freeborn County. Can there be project screening?Lots of large white shipping containers. We could paint them forest green, so they blend in. Or add a 12-foot barrier that is not barbed wire, one that would look nice. If you require that, does that create a hinderance? Would we have a neighborhood watch where the commissioner gets notified if someone sees something?
    - Jacques Harvieux: You can ask for those permit conditions. MPCA noise limits are standard for human settlements. Ambient noise levels would have to be studied and added.
- Dan Pfeiffer: Next meeting: viable alternatives and mitigation measures. If this issue is real and not perceived, typically you look at avoiding, minimizing, and mitigating. If noise is a concern, we include that in the report or the summary. Is there a preference for noise mitigation? A decibel noise study for animals? Same with aesthetics: are there ideas for it?
- Adam Hamberg: There are pipeline protests up north. Are there people in the green community who would protest this project? I don't know if that's an issue. Is this something I have to plan for in the future from an emergency preparedness standpoint?

- Dan Pfeiffer: Are there other questions before we end the meeting?
    - Andy Henschel: More information about groundwater flow? We do a lot of living fences, that helps aesthetics and sound buffers in native areas like tree buffers.
- Tim Kaasa: When do we present alternatives?
    - Dan Pfeiffer: Bring them to the next meeting. I'll bring a map.
- Dan Pfeiffer: Everything is included in the report. The goal isn't consensus, but rather we layout what we've talked about, concerns, and things that are consensus. People can comment on that report. This doesn't take away your ability to comment outside of this task force.

Appendix D – Advisory Task Force meeting #2 agenda, slides, and meeting minutes

MINNESOTA
PUBLIC UTILITIES COMMISSION

Midwater Battery Energy Storage System Project Task Force

Meeting #2
August 22, 2025
10:00 a.m. to 1:00 p.m.
Freeborn County Courthouse
411 Broadway Ave S, Albert Lea, MN 56007

AGENDA

	Activity	Time
1.	Welcome and agenda review	10:00 a.m.
2.	Recap task force ground rules and mission	10:05 a.m.
3.	Recap task force meeting #1 and overview of impacts discussed	10:10 a.m.
4.	Discussion: Additional impacts	10:20 a.m.
5.	Noise data and ecological impacts Guest speaker: Samantha Bump, Department of Natural Resources	10:35 a.m.
6.	Fire safety information Guest speaker: Mike Volz, on behalf of the Minnesota State Fire Marshal	10:55 a.m.
7.	Stormwater design requirements Guest speaker: Linnea Savereide, Minnesota Pollution Control Agency	11:15 a.m.
	BREAK	
8.	Address additional questions from meeting #1	11:45 a.m.
9.	Discussion: Viable alternative sites	11:55 a.m.
10.	Discussion: Mitigation measures to be studied	12:15 p.m.
11.	Next steps	12:50 p.m.
12.	Adjourn	1:00 p.m.

Thank you

Project Task Force Meeting #3 Topics: Wrap up discussions of impacts, alternative sites, and mitigation measures; ATF report drafting and review process	Tuesday, September 16, 2025 11 a.m. - 2 p.m. Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007

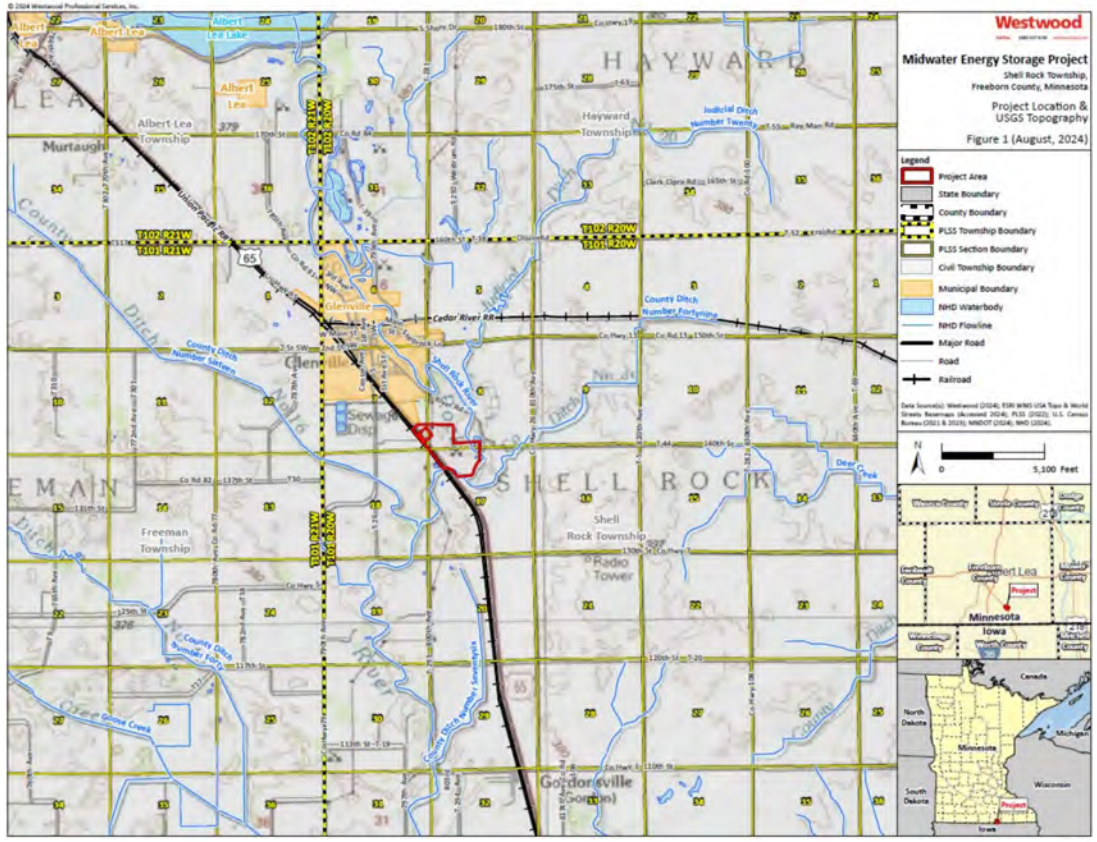
MINNESOTA
PUBLIC UTILITIES COMMISSION

Project Task Force
Midwater Battery Energy Storage System

August 22, 2025

	Activity	Duration (minutes)	Start Time
1	Welcome and agenda review	5	10:00 a.m.
2	Recap task force ground rules and mission	5	10:05 a.m.
3	Recap task force meeting #1 and overview of impacts discussed Discussion: Additional impacts	25	10:10 a.m.
4	Noise data and ecological impacts Guest speaker: Samantha Bump, Department of Natural Resources	20	10:35 a.m.
5	Fire safety information Guest speaker: Mike Volz, on behalf of the Minnesota State Fire Marshal	20	10:55 a.m.
6	Stormwater design requirements Guest speaker: Linnea Savereide, Minnesota Pollution Control Agency	20	11:15 a.m.
	BREAK	10	11:35 a.m.
7	Address remaining questions from meeting #1	10	11:45 a.m.
8	Discussion 1: viable alternative sites - Discussion 2: mitigation measures to be studied	20, 35	11:55 a.m.
9	Next steps	10	12:50 p.m.
10	Adjourn	0	1:00 p.m.

Proposed BESS Project



- Project proposed by Midwater BESS LLC, a subsidiary of Spearmint Renewable Development Company LLC
- 150-megawatt battery energy storage system (BESS) in Shell Rock Township, Freeborn County, Minnesota
- A 2,668-foot long 161 kV high voltage transmission line (HVTL) will connect BESS to the electrical grid

Work of the Task Force

Task Force will examine and make recommendations on the following:

1. Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied

2. Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives

3. Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility

4. Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties

5. Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services

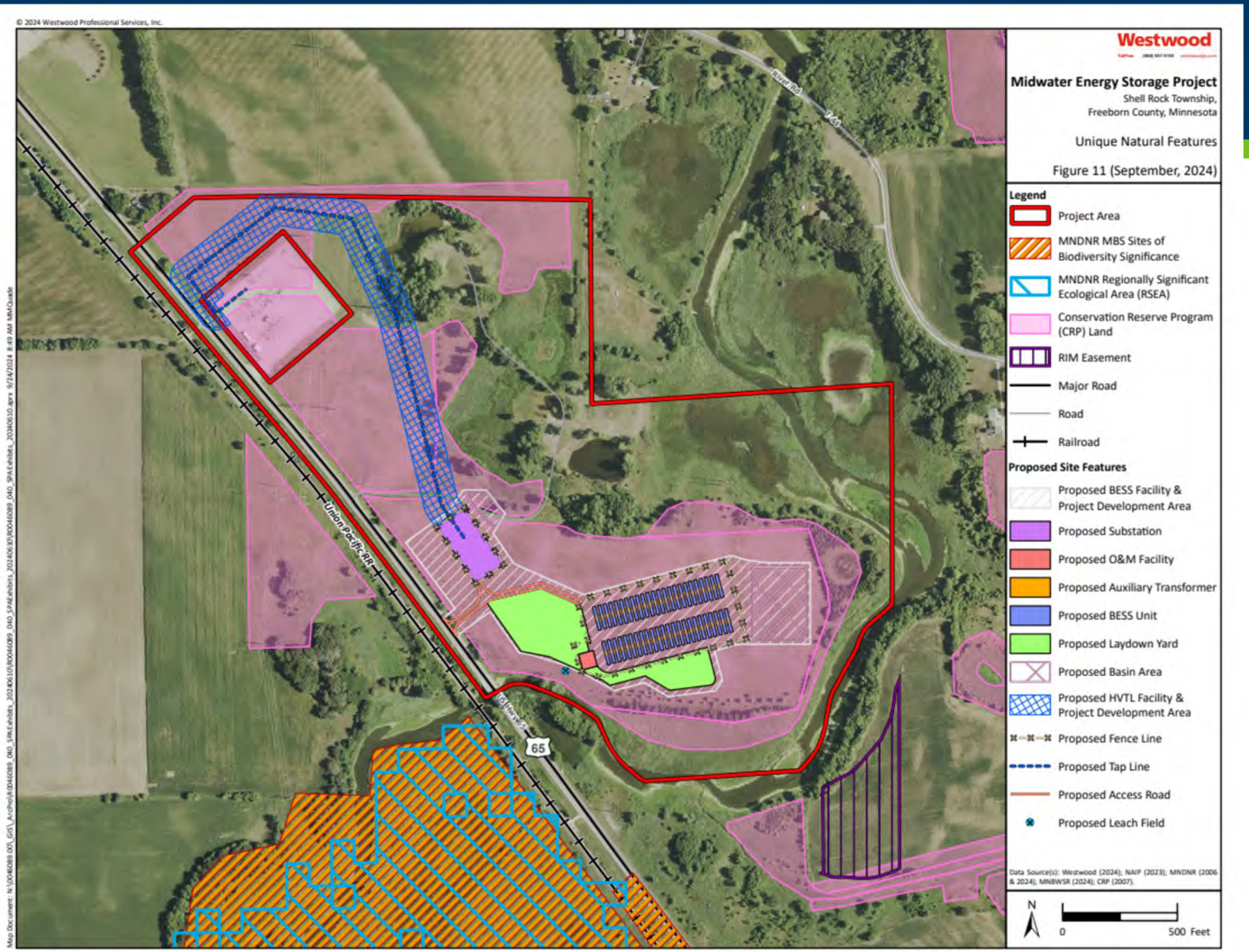
Work of the Task Force

- **Roadmap**
  - Meeting #1 – July 24, 2025: Review project and process; identify issues and impacts to be analyzed in environmental Assessment (Charge 2-5).
  - **Meeting #2 – August 22, 2025: Discuss issues and impacts (Charge 2-5); identify mitigation measures; identify viable alternatives (Charge 1).**
  - Meeting #3 – September 16, 2025: Discuss viable alternatives (Charge 1); discuss mitigation measures (Charge 2-5); discuss task force report; wrap-up.

Impacts for the Environmental Assessment

- **Potential issues and impacts identified in Task Force Meeting #1**
  - Site plan
  - Facility size specifics and distance from substation (the tether question)
  - Noise data and ecological impacts
  - Fire safety
  - Stormwater design requirements
  - Battery type alternatives

Site Plan Map



- Interactive site map: https://mncommerce.maps.arcgis.com/apps/webappviewer/index.html?id=988f504a6ea84ed2a636d75ba3db314d
- Additional project figures: https://eera.web.commerce.state.mn.us/web/project-file/13354

Additional Impacts

- Discussion
  - What additional impacts should be considered in the Environmental Assessment?

10 Minute Break


Substation
Aux Skid
Control House
Unit
Fire Control Panel

Viable Alternative Locations

Considerations for viable alternative locations

Operational Area

The operational area is defined as a one-mile radius from the substation.

The following areas are not available: the City of Glenville, the Shell Rock River, Shell Rock River floodplain areas.

Additional Costs

HVTL installation typically costs $2 million/mile. This does not include pre-installation costs like land purchase, permitting, and engineering.

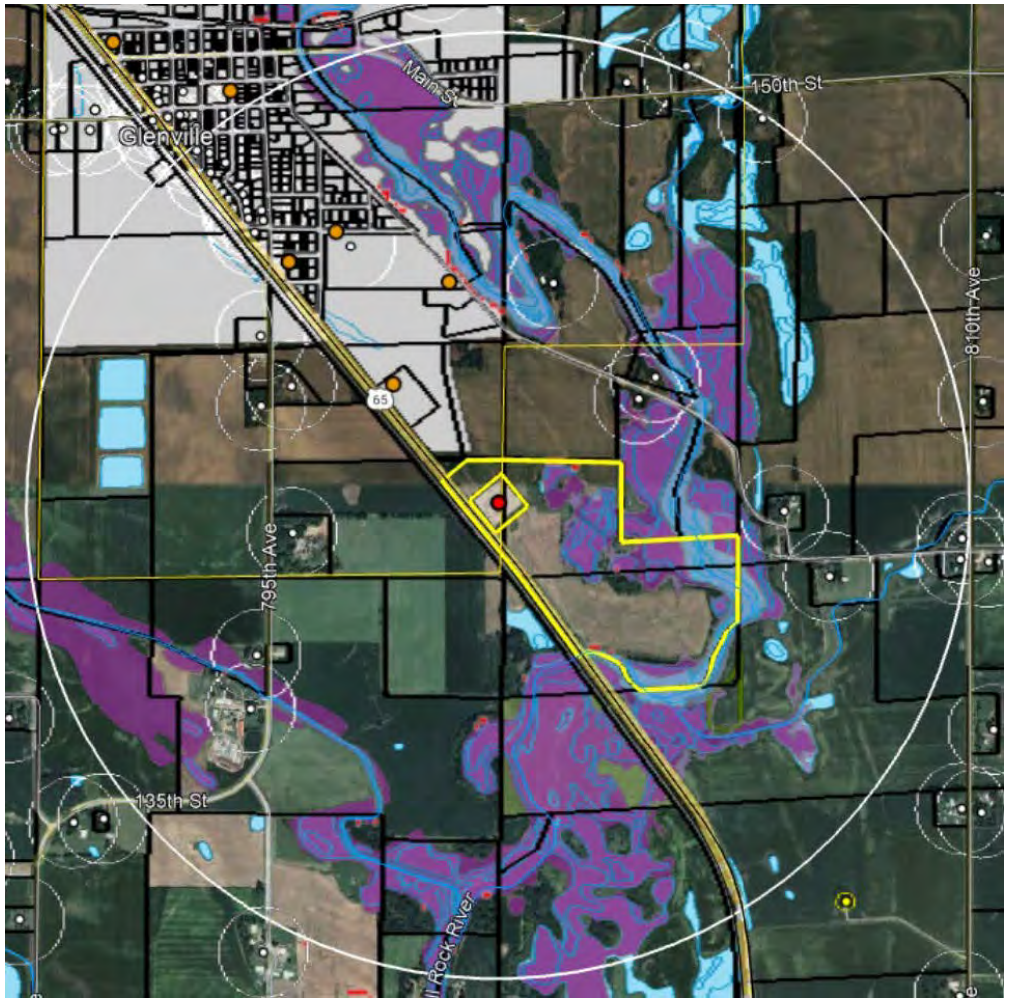
Available Land

Proposed land would have to be available to purchase and provide an unobstructed connection to the substation.

Interconnect

The current interconnect with Midcontinent Independent System Operator (MISO) needs to remain intact with no additional connections added to the project.

Viable Alternative Locations



- Proposed BESS site
- City of Glenville
- Shell Rock River and associated floodplains
- Glenworth substation

Snowshoe BESS Mitigation Measures

Resource categories in the Snowshoe BESS Project

Table 6. Regions of Influence for Human and Environmental Resources

Resource Type	Resource Element	Region of Influence
Human Settlement	Displacement, Electrical Interference, Land Use and Zoning	Land control area
	Noise, Property Values	Local vicinity
	Aesthetics, Cultural Values, Recreation	Project area
	Socioeconomics	Region
Public Services	Airports, Roads, Emergency Services, Public Utilities	Project area
Public Health and Safety	Electric and Magnetic Fields, Implantable Medical Devices, Stray Voltage, Worker and Public Safety	Land control area
Land-based Economies	Agriculture, Forestry, Mining	Site control area
	Tourism	Project area
Archaeological and Historic Resources		Project area
Natural Environment	Geology and Groundwater, Soils, Vegetation, Water Resources, Wetlands, Wildlife (except birds), Wildlife Habitat	Land control area
	Wildlife (birds), Rare and Unique Resources	Local vicinity
	Air Quality	Region

- Snowshoe EA mitigation measures (pages 33-88): https://apps.commerce.state.mn.us/web/project-file/13409

Identification of Viable Alternatives and Mitigation Measures

- Discussion
  - Group Agreements
    - Respect one another
    - Suspend judgement as best as you can
    - Seek to understand rather than persuade
    - Invite and honor diverse opinions
    - Speak what has a personal meaning
    - Go for honesty and depth but allow time for everyone to speak

Next Steps

- Next Meeting

Meeting	Date/Time
Meeting #3	Tuesday, September 16, 2025
	11 a.m. - 2 p.m.
	Freeborn County Courthouse 411 Broadway Ave S, Albert Lea, MN 56007

- Homework
  - Prepare to further discuss the viable alternatives and mitigation measures that were identified in today's meeting.

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Midwater BESS Project Task Force

August 22, 2025

Attendance:

Task force members in attendance:

- Melanie Aeschliman — Freeborn County
- Nicole Eckstrom — Freeborn County
- Jeff Fields — IBEW Local 343
- Mike Frank — ITC Midwest LLC
- Adam Hamberg — Freeborn County Sheriff's Office
- Andy Henschel — Shell Rock River Watershed District
- Tim Kaasa — Shell Rock Township
- Jeff Laskowske — Albert Lea Fire Rescue
- Mike Lee — Shell Rock River Watershed District
- Rich Murray — City of Albert Lea
- Wes Webb — City of Glenville

Also in attendance:

- Samantha Bump — Minnesota Department of Natural Resources
- Rich Davis — Minnesota Public Utilities Commission
- Emily Johnson — Minnesota Public Utilities Commission
- Courtnay Lenz — Good Steward Consulting
- Mary Matze — Spearmint Energy
- Dan Pfeiffer — Zan Associates
- Linnea Savereide — Minnesota Pollution Control Agency
- Jim Sullivan — Minnesota Public Utilities Commission
- Jack Volz — on behalf of the State Fire Marshal
- Brad Wilkening — Westwood Professional Services
- Javier Whitaker-Castañeda — Zan Associates

Not in attendance:

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- Jacques Harvieux — Minnesota Public Utilities Commission
- Tom Kaiser — Zan Associates

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Presentation

Dan Pfeiffer: Reviews the agenda. Reintroduces the overview of the project and the charges of the task force. In meeting #2, we will continue to discuss issues and impacts (charges 2-5), identify mitigation measures, and identify viable alternatives (charge 1).

Here are a lot of the large-scale issues we talked about in meeting #1: site plan, facility size specifications and distance from the substation (the tether question), noise data and ecological impacts, fire safety, stormwater design requirements, and battery type alternatives.

Discussion (Additional Impacts)

Dan Pfeiffer: Are there other impacts that should be considered? We had lots of discussion last time on fire hazards, water resources, a few questions and comments on alternative sites, and some on contamination. Those were the largest categories, and there were a few other questions about emergency contacts, decommissioning, etc.

Nicole Eckstrom: We also discussed noise and ecological issues, and long-term economic impacts related to the site.

Mike Lee: Closeness to the public hunting area and the hazard of rifle hunting nearby.

Jim Sullivan: Did we talk about fence height?

Dan Pfeiffer: We talked about the fencing at the Snowshoe BESS project.

Jeff Laskowske: I searched and couldn't find burn testing information. If the battery burns, what kind of gas is released? Is it explosive? What are the impacts of different battery types?

Jim Sullivan: We can talk about battery energy storage systems. We have the Shell Rock River nearby, the DNR is looking at that, there is also the wildlife area next to it.

Presentation (Noise Data and Ecological Impacts)

Samantha Bump: When we [the Department of Natural Resources] evaluate a project, we start with a national heritage review, a review of the impact on natural resources, native plant communities, and other resources. That is part of the early coordination work.

We look at neighboring lands; transmission lines' impact on birds migrating through; groundwater impacts, whether through construction or continual use through the project; surface water into nearby water resources; fencing, we've had issues with deer entering facilities and not being able to get out, or getting impaled on fencing. We work to develop a good fencing design to eliminate that issue. We look at lighting; dust from construction or project operation; wildlife friendly erosion control, which we encourage at all projects. Good erosion control minimizes entanglement with turtles or snakes and prevents animals from getting stuck and dying. We also take that into consideration for wind and solar projects, as well as BESS projects.

Jim Sullivan: Noise is a novel topic for the DNR, but not outside of its wheelhouse.

Samantha Bump: There is research on the impact of noise on wildlife. We don't have data on BESS noise yet, but it will be evaluated in the report. We don't anticipate a lot of impacts that aren't already existing.

Jim Sullivan: My colleague Rich Davis works with the DNR on bat populations, noise is a factor. He studies wind's impact on noise. Some of this might be transferable to this conversation.

Mike Lee: I have a concern about stormwater ponds. They're set at one inch, but the last few weeks we've had seven inches of rain. How much should these retention ponds hold?

- Jim Sullivan: That might be a question for Linnea Savereide from the MPCA (Minnesota Pollution Control Agency).

- Samantha Bump If there's overflow, that's our [the DNR's] concern too.

Nicole Eckstrom: My concern is that, by the time an issue is found out, a lot of damage has already been done. If the task force makes recommendations on protocol, is that something that the developers definitely follow, or can they do what they want?

- Jim Sullivan: Part of this is up to the commission whether to enforce each recommendation. If it's something novel they'll look at it differently, the commission will ask a lot of questions. What becomes important for us, we [the Public Utilities Commission staff writing the Environmental Assessment] have to build a record of what the recommendation will look like on the ground. We give our best effort. When the commission looks at these topics they ask, "if there is an emergency can it be addressed it in a timely manner?" That is also part of the EA analysis. "What is their response time? How can they reduce any impact?" That is also a topic in the EA.

- Nicole Eckstrom: With the new technology, the choice to place the site right on a river, to pick such an environmentally sensitive site to be the guinea pigs in this type of project, is concerning. The watershed district talked about how many million dollars it took to clean the Shell Rock River, so to bring an industry we don't know a lot about, despite the mitigating factors, is still a significant concern. We don't know what could happen, there could be a thermal event with off-gases.

  We've seen other examples, we know what PFAs can do. I think about what we've learned with the 3M situation; we will forever be trying to clean that mess up. I read the reports about the other facility by Byron; Glenville is very different from Byron. The fact that we've put a significant amount of money into the DNR wildlife area right across the street. If we make the recommendations, it will be too late to take action. There was the recent Gopher Resource case and the release of lead.

  What happens is that the burden goes on residents. Whether it's county or small city governments, they have to fund lawyers to fight these big companies. These things are dragged out for decades. The government is there to protect citizens and the environment. It still is a big concern for me to have it right on the river.

Tim Kaasa: How many BESS sites are you dealing with now at the DNR?

- Samantha Bump: The first one was permitted last week. There are less than half a dozen BESS sites that I am aware of in the DNR process right now.

- Tim Kaasa: We can't figure out why this site was even considered from the get-go. We have drone images of the geography. It's unimaginable to me.

Presentation (Fire Safety)

Mike Volz: I've done five or six of these projects in different technologies. I've worked with lithium-ion batteries in 2019; I traveled all over the nation doing safety response. People talk about thermal runaway and all the events we've seen in the past. This BESS is lithium-iron technology, which has huge differences to lithium-ion. We just don't see thermal runaway with lithium-iron. Lithium-ion gives off bad gases, while very few toxic gases are given off by lithium-iron. The BESS containers each have their own monitoring system and fire suppression system.

There is just one project I know of that malfunctioned; within three weeks of being installed one battery defected due to a manufacturer error. The fire department wasn't needed and didn't even hear about it until it was resolved. The site was back up and running within two weeks. It's a very safe technology. Lots of other technologies are being experimented with, this is almost not even a new technology.

Dan Pfeiffer: One impact question from last meeting was about training with local fire departments. Can you talk about that?

- Mike Volz: We contact the monitoring company for the BESS storage, we look at the location and the safety measures, we ask what is expected of the fire department. Whatever technology there is, we do training on how it's put together. We have no problem doing training. We have already done a lot of training in the past.

  Typically, when the site is operating, access is open. When it's closed, it's closed with a padlock. Emergency services can get through a padlock. If a worker is hurt with an electrical injury, the monitoring company has the ability to shut the site down remotely. If a worker were to get into the container and wasn't using proper protocols, there could be an injury. The odds of a first responder getting hurt are minimal.

Tim Kaasa: How many BESS units are there with lithium-iron?

- Mike Volz: I know of four in the state of Minnesota. One is a 6-megawatt system up at Ramsey, a lithium-ion that was converted to lithium-iron maybe four years ago. This project is solar storage. It's a peak-shaving generator. They release this power back to the grid, so they don't have to restart the generation system.

Melanie Aeschliman: I read that lithium-ion facilities have the ability to release gases if they explode.

- Mike Volz: That's correct. This project is lithium-iron, which has a low potential to release off-gases.

Adam Hamberg: This is new and larger than the state is used to. If the whole thing explodes, what are we looking like for shutting infrastructure down? Do we have to block roads? Will it encompass both sides of the river? Will it impact Highway 65?The railroad? The high school? What safety measures are needed?

- Mike Volz: The BESS system is not one container, it is multiple shipping containers. Typically, for 150-megawatts, there could be a bunch of them. I have never seen a fire propagate outside of one container. The monitoring company will know if something is happening, but others outside the facility might not even realize. It will be contained. The systems are designed so the monitoring equipment is powered outside of the container, so they don't lose monitoring or fire safety systems or ventilation systems in the event of an emergency. Even with a horrible disaster, it would be one container. The odds are so small.

- Adam Hamberg: Is wind direction a concern at all?

- Mike Volz: For me, no. It's lithium-iron technology, so it's not giving off all the bad gases.

Nicole Eckstrom: When Spearmint hosted a public session, they brought a fire official from the east coast. Despite the lithium-iron not giving off its own gases, what he talked about was toxins from the containers that they are stored in. The battery itself might not be as hazardous as other batteries. But what it is housed in, and the fact that units will burn themselves out, means we will still have toxins from the container or different plastics.

- Mike Volz: We will have toxins from insulation on the wiring, from the containers themselves. There will still be toxins there, just not from the batteries. We have toxins off of every fire that burns: houses, stores, etc.

- Nicole Eckstrom: House fires are put out immediately, whereas these are allowed to burn out.

- Mike Volz: We try to put it out as soon as possible.

Nicole Eckstrom: Reading through the Byron-area BESS, the application gives two types of battery options: Manganese or lithium-iron.

- Jim Sullivan: That is specific to the design of that project.

- Mary Matze: I think the Nickel -Manganese-Cobalt (NMC) battery was brought up in a question by PUC staff. A NMC battery has higher potential for thermal runaway. The industry transitioned away from that technology. Lithium-Iron-Phosphate (LFP) batteries are heavier batteries, and became more commercially-viable because potential for thermal runaway is lower and they are just as powerful as NMCs. We will not use NMC in this project, it's not in our business model. What we don't know is what brand of LFP battery we will buy. We still need to make that decision.

- Mike Volz: When I reviewed the proposal, I had that question too. When I heard LFP I felt better.

Tim Kaasa: What about life of battery? What to do at the end of its lifespan, recycle?

- Mike Volz: There are multiple things being done now. We have repurposed batteries. Lithium-iron has a set degradation rate. It is not like a battery in a flashlight. Once they start to lose their ability to hold charge, they lose so much energy over time. The batteries are not replaced because they have died. They are replaced when they are below 60-70% of their original capacity. That's why we are replacing the batteries. Some are being re-used. They will use them in smaller electrical storage systems. People have generators outside their homes, and in the future, I think we will see more battery power units in homes. We do have recycling facilities now, 97% of the battery can be recycled.

Melanie Aeschliman: What are the risks and dangers of this battery?

- Mike Volz: There's always a chance for thermal runaway. Even some lithium-iron batteries have gone to thermal runaway. I only know of one.

  I've sat through testing of this technology. Everyone has seen lithium-ion batteries set on fire. LFP technology just smolders. It gives off a little bit of gas, carbon monoxide, not a big fire. That's one of the main reasons companies have gone to LFPs, because of the safety factors. LFP batteries don't use as many precious metals. They are inexpensive to make. So many pluses. I expect lithium-ion to fade into the past. Thermal runaway can happen with lithium-iron, but it's not a big event. I worry more about the batteries when they are being transported down the roadways, not when they are set in the facility.

Presentation (Stormwater Design Requirements)

Linnea Savereide: I'm here on behalf of the Construction Stormwater Program. The Minnesota Pollution Control Agency (MPCA) is a big organization, has multiple programs that may interact with this project. They will need a construction stormwater permit. I'm seeing fourteen acres of new impervious surface. Permanent stormwater treatment is required and will be in the report. We don't have specific requirements based on BESS's unique features; general requirements apply. Half of the requirements are during construction: erosion protection, sediment control. This project is about 250 feet from the river, projects within 50 feet have more controls. There is no special erosion control for this project. It is not typical that there are special provisions.

In terms of permanent stormwater treatment: we require one inch times the net new impervious, that gives you a volume and that volume has to be treated. I can't tell from the report if the project will have ponds or infiltration basins, both have different requirements. The water quality basin stays the same regardless.

One-inch treatment is required to maintain hydrological conditions of the site. Through research we found that 1.1 inches times net new impervious would give the best result, but that was complicated for enforcement reasons, so they negotiated to one inch. Local regulations might require more.

We don't have direct rate control requirements. Whether it's a pond or basin, there are different requirements for that. These standards are not intended to treat all the rain that might fall. It is to treat the first flush; the first inch of rain picks up most contaminants, that hopefully will be mostly captured. The rest of the rain is often cleaner, from quality perspective it's fine. From a quantity perspective, we don't have requirements in the permit. There will be discharge to the river, that is pretty normal. We don't comment on site location; any project that happens in the state, we make sure they are following general permit requirements. The task force can talk about the site. We [MPCA] don't have authority to say whether a project is good or not, just if they are following the rules.

Jim Sullivan: One of the concerns has been that if there were a leak or a discharge of glycol, like anti-freeze, if that were to make it into the river is there any type of abatement that you would consider?

- Mary Matze: Each enclosure is one battery container. Each has 20 gallons of anti-freeze that runs throughout the battery, so if there is a leak in that enclosure, the tray can be removed, and the anti-freeze is stopped. If it leaks, it is captured in the enclosure. Not all batteries would leak at the same time. If all preventative measures failed, you'd have a maximum 20 gallons of anti-freeze leaking. A rain barrel is 55 gallons, so less than half of that. It's 20 gallons times 170 enclosures. They are not connected together.

- Jim Sullivan: Each container has its own plumbing, safety systems, etc. None are connected.

- Nicole Eckstrom: With climate change and more extreme weather events, our area already sees more tornadoes. Day to day, a single unit might have an issue. But what about extreme weather or tornadoes, would we see more leakage? A different site further from the river might have less environmental impact in events like these.

- Mary Matze: Brad from Westwood Professional Services can talk about BESS stormwater management. Is your question about anti-freeze on the site?

- Nicole Eckstrom: I'm asking about other types of thermal events as well, ash, for example. If there's a fire and then a heavy rain the same week does it wash the ash somewhere?

- Mary Matze: So if there's a weather event, how do we manage for that? The goal is to clean up immediately in case of an event. We provide water quality treatment.

Brad Wilkening: I work on BESS sites throughout the United States, specifically on stormwater. I live in Minnesota and have worked here for a long time. In stormwater ponds, there's a few different things that they do. The MPCA requirement is to capture that first one inch. Some places require 1.5 inches. The idea is that one inch covers 90% of rainfalls.

The purpose is to improve the quality of the water by removing contaminants—phosphorous, nitrogen, particles—we treat it in a number of ways. One option is infiltration, another way is to run the water through sand and have drain tile underneath. There are also wet ponds that slow the water flow down. The MPCA doesn't require rate control, most watersheds and cities and counties do. We assume it's required. We look at three different types of storms. 6-7 inches is a very large storm. 15 years ago, the storms were smaller. We calculate the runoff from the site plan. With a paved parking lot, almost everything runs off; for a sandy beach, almost nothing.

We look at 2-year, 10-year and 100-year rain events. If the ground is sandy there's less runoff. If it's clay, then more runoff. We match that calculation with the pond, matching the extra flow and the size of the outlet. We design the pond to match the rate. If larger, we provide an overflow so the storm can still get through. We calculate as if the entire surface area is paved. In reality, these sites have a rock ballast underneath, which does absorb some water. We assume pavement in the calculations to be conservative.

We overdesign for some of the smaller events. It's easier to include in reports. One inch is dealt with in different ways depending on the site. We could include a slide gate on the pipe as part of an emergency management plan. That's usually used for a water impoundment facilities, and might have a handle for opening and closing. Someone could close that gate to prevent water from escaping while whatever happened is dealt with. Not terribly complicated.

- Dan Pfeiffer: There were questions about liners last meeting. Have you seen it used?

- Brad Wilkening: There are situations where you can put a liner in the stormwater pond. It's not typical to put a liner under the entire site. That's treated as a cleanup item, people have to come in and deal with contamination. For the pond, sometimes liners are required, and can be made from rubber or clay.

Dan Pfeiffer: Thinking about taxpayer protections, who manages the stormwater ponds and maintains them?

- Mary Matze: The operator maintains them.

Andy Henschel: Can we use a biochar filter or sock to pick up the contaminants at the outlet?

- Brad Wilkening: You can have biochar cartridges, a biochar bay filter by a water exit. One benefit to this type of project, there is always monitoring and maintenance, and it's the owner's responsibility to maintain this thing. I know from experience, BESS sites like this get maintained more than some other types of facilities.

Linnea Savereide Why a pond rather than filtration?

- Brad Wilkening: I don't know exactly what we will use.

- Mary Matze: It's too early in the process to do the geotech.

- Linnea Savereide: The MPCA permit requires the developer to review filtration first. Groundwater is high in areas by the river; if the groundwater is within three feet of the bottom of a practice, you have to have a liner. A gate makes sense; a liner makes sense if there's no infiltration. Is it correct that there will be 1300 gallons of gasoline on site?

- Mary Matze: We will do a test Spill Prevention, Control and Countermeasure (SPCC) plan for the substation.

- Linnea Savereide: We prohibit infiltration if it's getting runoff from fueling areas. Batteries have a clean runoff unless something goes wrong. A filtration basin is usually dry, so if there were toxins, you could close gate and block off water flow, take contaminants out and treat it. That could be the response if toxins leak into the basin. There could be one stormwater area next to the substation and one next to the batteries.

Tim Kaasa: Do you take into account the drinking water area? There are several wells in the area. When you look at that from the DNR standpoint, we have to protect drinking water in Glenville.

- Linnea Savereide: For this drinking supply management area, we would narrow to filtration or a pond. This means no contaminants in groundwater, but it goes into the river instead.

- Tim Kaasa: Shell Rock River goes to a recreation area in Iowa.

- Mary Matze: Are you saying you would do a lined pond with a gate, to pump water out? If we didn't do that it would all go to the river?

- Linnea Savereide: No matter what type of water management, the runoff will go into river. Normally it's not that big of a concern, there are not contaminants in it normally. Usually we are treating runoff for dirt and phosphorous.

- Tim Kaasa: The concern down river in Iowa is if something happens. We have to look at that possibility.

- Linnea Savereide: If you have a gate and good monitoring, you could be pumping everything out.

- Dan Pfeiffer: If there is a thermal event and then a large rain. Or a catastrophic failure. There's planning around that possibility. You can't completely mitigate the risk out of catastrophic events. One of the concerns is risks from an event at one of the containers, whether anti-freeze/glycol leak, or a thermal event, how do you manage that? Is that one of the permit conditions that the task force wants to recommend?

- Linnea Savereide: That is beyond MPCA requirements. My Industrial Stormwater Program colleagues think this won't require an industrial permit.

Jim Sullivan: Emergency response contingency plans could come into the permit during the Environmental Assessment (EA.) The release rate issue and the potential role of the watershed might be relevant here.

- Linnea Savereide: We have indirect rate requirements. You can only go 5.66 cubic feet per second per acre of surface area. Filtration basins need to discharge stormwater within 48 hours. Will the MPCA make recommendations during the EA process? The MPCA person who does this doesn't comment on rate control usually.

- Andy Henschel: Spearmint Energy has our rate control standards from Watershed documents. It's a sandier site out there. Rate is controlled by the soil out there.

- Nicole Eckstrom: When it comes to monitoring the lined ponds with a gate, how do we know that the company is monitoring. Can we have a third-party monitor to check what is in those ponds? Who do they report to?

- Jim Sullivan: We have had third-party monitors in other projects. We could put that as a recommendation. It could become part of the permit. History would show there have been times when it has been done.

- Linnea Savereide We wouldn't require third-party water monitoring for a construction stormwater permit. Maybe an inspector. For a complaint or request we can definitely send someone. There is no long-term monitoring through the construction program.

- Nicole Eckstrom: Can we have monitoring for water in the basin or sediments.

Mike Lee: A 6-inch rain happens more than every 100 years, can they adjust the holding pond standards to new information?

- Linnea Savereide: Atlas 14 rainfall data is a big improvement on the past. The federal government is working on Atlas 15, which might include climate protection precautions. I wouldn't consider only Atlas 14, for an ideal result. They do have confidence intervals: 90% confidence, 10% confidence, etc. Using a high confidence interval would be similar to other climate projection methodologies.

Dan Pfeiffer: Can someone who works with rainfall data clarify what is meant by "100-year rainfall" or "10-year rainfall"?

- Brad Wilkening: A 100-year event is a 1% chance every year. A 10-year event is a 10% chance every year.

- Linnea Savereide: It's like rolling dice. 100-year storms are happening more frequently now. Atlas 15 new data will be updated for lots of different frequencies.

Mike Frank: They [Spearmint] are designing for impervious but it's for concrete. The design is over engineered as it is. Keep that it mind for capacity.

- Linnea Savereide: MPCA would consider that rock impervious.

- Mike Frank: It's different than concrete.

- Linnea Savereide: The ground is pretty compressed under the rock, it won't absorb water the same way.

Mary Matze: To clarify, the pond itself won't be one-inch deep. It is treating one-inch of pollution, related to the first flush. Shell Rock River Watershed has 1.25 inches as that treatment, we are happy to comply if that is a condition for the site permit.

Andy Henschel: Proposed leach field, do you know what that is yet?

- Mary Matze: We have an operations and management building for onsite tech.

- Andy Henschel: Will there be a holding tank or a leach field?

- Mary Matze: We don't know, but we can talk about it. What we're looking at is can we fit all components of this project on the site? All of the elements on this site will likely shrink, because the design is conservatively spread out, to make sure we have a viable project.

Presentation (Site Map and Tether Distance)

[Mary Matze presents an image of a BESS site in Texas, to review site components]

Mary Matze: This example doesn't have screening, since it's in the middle of Texas. It's a good example of how the batteries are arranged on a BESS site. The units are grouped together in threes with a power conversion system on the end, which has a line into the substation and a separate line that goes to the control house. All of the data from the batteries goes to the control house. There are three types of detectors: primary fiber internet cable, a backup satellite internet system, and a line that goes to a fire control panel.

On newer sites the sensory information gets transmitted. There are two types of remote monitoring. One is a discrete fire command system that monitors 24/7. Emergency management will be called directly if there is an incident. Also, the remote monitor system will call the operators and the site manager. They can tell exactly where the issue is remotely. There is a full-time on-site tech working on issue prevention. Substation transfers energy into the grid operator system. The auxiliary (aux) skid system is a backup power system so each individual enclosure will never lose power, they don't power their own monitors. The aux skid has 48 hours of backup power. They are integrated systems that are trying to prevent anything from happening.

Jim Sullivan: Moss Landing is the poster child for a BESS system failure.

- Mary Matze: That fire happened inside of a building without the specialized containers that were separated, and the containers were too close together and weren't rated to prevent spread. They were using NMC batteries and that BESS was connected to a gas facility. Midwater has no co-located energy facilities, it is just a BESS.

Melanie Aeschliman: Is gasoline stored on site?

- Mary Matze: The Glenworth substation has some gasoline to power generators as needed. We do have to create a Spills Prevention and Cleanup Plan. The gasoline sits inside the substation itself.

- Melanie Aeschliman: When we talk about disasters, when we add gasoline, are there additional dangers with the gas?

- Mary Matze: We are not seeing that. The reason we have setbacks is to prevent spread, prevent something from happening to all of the units at the same time.

- Jim Sullivan: With fuel storage, is that above or below ground storage?

- Mary Matze: I don't know, it doesn't usually come up because it's standard to substations. It follows fire marshal regulations. In the Texas sites there was a short-term duration of having construction fuel during the building process.

- Wes Webb: That was probably diesel and not gasoline, which is a lower risk.

Jeff Laskowske We talked about tornadoes and catastrophic events. The top speed was 90 mph in the last storm.

- Mary Matze: This site is located in a floodplain. These containers are all elevated two feet off the ground to avoid flash flooding. Our goal is to keep the containers out of the water. They sit on piers.

- Andy Henschel: Does the container have a lip on the bottom, are they sealed?

- Mary Matze: Yes. There are four parts to the interior of a battery: two sets of trays of batteries, little battery cells on the trays, the battery management system, and the thermal management system. We keep these things separate. These compartments are sealed separately. There are little holes so the management systems can breathe. The entire bottom is also sealed. If the glycol solution leaks, it comes out the holes in the front and is caught in the bottom. They can pump out the container if there is a large disturbance. It would take a big disturbance to breach the container.

Wes Webb: How is the cooling done?

- Mary Matze: The battery has a heat exchanger to keep it warm in the winter. There are tubes that run through all the battery trays, little tubes that pop off and put on to control the flow of the glycol. When there's a leak, they take out the tray and replace it with a new tray. That's one preventative measure.

- Wes Webb: So, glycol is the agent for heating and cooling? What I'm getting at is concern of the noise for surrounding citizens. That would have to be mitigated.

- Mary Matze: We do sound studies. The BESS units make noise when charging and discharging, they don't make that noise all the time. We don't exceed 50 decibel levels above normal sound rates. Measurements are based on the nearest neighbor and take existing noise levels into account.

- Nicole Eckstrom: Is that calculation per unit or cumulative?

- Jim Sullivan: They made a model to account for all sound generated.

Discussion Section (Viable Alternative Locations and Mitigation Measures)

Dan Pfeiffer: Let's begin the discussion on viable alternative locations. The operational area is defined as a one-mile radius from the substation. Some considerations: there are additional costs as HVTL line typically costs $2 million per mile. The land has to be available for purchase. Midcontinent Independent System Operator (MISO) interconnect needs to remain intact with no additional connections.

[Dan Pfeiffer shows the map of the one-mile radius area]

Tim Kaasa: The City of Glenville has ponds close to town, I don't know if that's a viable option.

Wes Webb: One thing that won't work, there's trap shooting out there at a high elevation and the noise carries. That might apply to the noise impacts at this site.

Nicole Eckstrom: Some information that I read, if we put mitigation efforts, there's ways of making them sound insulated instead of standard containers. Is there a way to do fencing or insulation? They've created high walls that insulate sound.

Wes Webb: Speaking about Glenville overall, fire risk can be mitigated with training and preparation. Not something to get real concerned about.

When it comes to risk, we've lived with the Union Pacific line going through our community, two blocks from the elementary school. The materials that are being brought through the community….the hazard of this battery is low compared to the railroad chemicals. The trains are maintained by people we don't know and don't have control over. We have the ethanol facility that always has a million gallons of storage. We've had events there. We have the SoyMor biodiesel plant.

For this BESS project, I look at it to where it has to have the correct sitework to have the base it's going to sit on. Correct retention ponds. Controlled noise. As far as a hazard, if it were lithium-ion I'd have a different opinion because of the volatility. This is a sign of the times. We used to have nothing, then we had windmills, then solar panels, now this. This is the next step to provide the power that we need.

For spillage risk, the railroad tracks have marks from liquids. This BESS spillage risk is low. East of Glenville there was an oil spill, and they brought in the oil-eating bugs. In a perfect world, we don't want any energy developments. But it takes care of our needs, and we don't always live in a perfect world.

Nicole Eckstrom: Who implements the one-mile radius? We talked about putting it by the wastewater treatment plant. Who determines that radius? Does it have to be one-mile?

- Jim Sullivan: We're focusing on the substation we have now. If you move the footprint, if you have to add additional infrastructure between the substation and the facility, then you have to modify the application and start over entirely.

Wes Webb: Would there be issues with the lake and the headwaters of the river if we move the site?

- Jim Sullivan: It's important to understand, there's eminent domain considerations. Transmission lines would potentially be crossing other properties, we need to be able to get a purchase agreement, or some acknowledgement of availability. Spearmint doesn't have eminent domain and needs to purchase with consent. There has to be property available.

- Nicole Eckstrom: That drives home a point that I tried to make earlier. Why did Spearmint choose that substation? It almost feels like forcing a site that might not be the best site, mostly because of river and DNR management. Then there's the question of leasing land versus purchasing land. I believe the Byron project is leasing land.

- Jim Sullivan: We need an actual commitment to rent the land. I say that not to speculate, I have to be able to assess a piece of property that is viable, for the EA.

- Mary Matze: The land that goes underneath the transmission line, we need site control for that line and the BESS site.

Nicole Eckstrom: After we talked about it at our first meeting, for me as a county commissioner, I can't solicit landowners because it's not appropriate for me to be asking people about that. It's out of scope for my job, and not ethical. This is putting the burden on the people on the task force, when in reality it was Spearmint that should have had alternate sites.

Adam Hamberg: Is Spearmint a private company? Because that's a business factor when we think about their spending.

Wes Webb: Between 1-1.25 miles south of the proposed site, there was a lead acid battery power plant. It was decommissioned; I own the property. Battery power has been around.

Mike Frank: I can talk about transmission. Adding transmission line would be on private easement. Landowners would have to agree on the easement status with Spearmint. It would need a review and the same standards for environmental routing and siting, we would need to do that whole process.

Tim Kaasa: Why weren't there alternative sites proposed originally?

- Jim Sullivan: It's a blank spot in the regulations; they are not compelled to provide alternatives.

- Mike Frank: It's unique that this substation has the capacity line, not every substation has that. The footprint is important. We need the footprint to bring the wires from the ground up to the power lines. Some sites have the same voltage but different functions.

Dan Pfeiffer: A private business makes a business decision and submits paperwork for the approval. The PUC happens to be permit approver, but the process is similar to a building development. I work in transportation, when planning a new road, alternatives have to achieve the same outcomes. There's a viability component. The EA is prepared by the State. Maybe there aren't alternatives that the task force can identify, but we can talk about mitigations to the previously discussed impacts.

Nicole Eckstrom: To move to mitigation, some of the things would be the same. If we move to a new site, we would discuss different mitigation measures. Is Spearmint going to go out and look at areas that aren't in the floodplain?

- Jim Sullivan: Spearmint was not required to propose alternative sites in its application. We would not analyze alternatives in the EA unless viable alternative sites are identified and included in the scoping decision.

Dan Pfeiffer: The Shell Rock River impacts have been the largest unknown so far. There are things that can be mitigated for in fire safety. Some river-related things maybe can't be mitigated, and the PUC has to make a decision on that. In environmental reviews we look at the impacts then we look at "can we avoid those?" Then, "can we mitigate them?" Decision-makers make a decision based on that knowledge. That's the discussion that we should have.

Jeff Laskowske: I trust Andy at the Watershed as a runoff expert. Andy, have you seen enough to trust that impacts could be mitigated?

- Andy Henschel: One, it don't matter where you put the site, the river is still there. The water is going to get to the river. I believe there are plenty of things that can be done to help protect that river in any situation. Tons of mitigation opportunities.

Nicole Eckstrom: Is this the opportunity to say we'll need this equipment or this training or these mitigation materials? So, it gets incorporated into the report, and not just glossed over?

Wes Webb: It's in Glenville's fire purview, fire concerns need to be directed to us.

- Jeff Laskowske: We just talked (Wes and I) about working together to prepare.

- Wes Webb: Do we need a gallon per minute flow to cool the box? Can that be developed in the guidelines? You don't want to put one thousand gallons a minute on it, if you only need 100. Why put more water on it that necessary?

Dan Pfeiffer Let's go by topic. Let's stick with fire and safety hazards, other mitigations?

- Wes Webb: Training needs are a mitigation measure. Can we stream video of the site into the fire station?

- Jeff Laskowske: We want specialized knowledge that would help cool but reduce the gallons used. We can limit gallons per minute (GPM) needed.

- Andy Henschel: Can we draft water right out of the river? Dry hydrants?

- Jeff Laskowske: Dry hydrants fill with sediment, and you have to clear it out. We can't go below 14 feet because then you can't get a draft. We might have enough water on site to deal with it.

- Wes Webb: We need an emergency management trailer for Andy and Adam.

Adam Hamberg: I'm not getting answers to my questions. As a communicator with the public, I'm the only one that can send out emergency notices to the county. The sheriff or the fire chief does that. There are so many unknowns about wind direction and fallout. Sounds like we're testing the waters on this new technology. We'll build it to find out. Those are some of those questions.

- Dan Pfeiffer Would an emergency management plan of how you would handle it make sense?
- Adam Hamberg: Yes, and we want to work together to make any changes that need to be made to the plan. When this gets built, if we have access to this plan, so that we can implement those changes right away and update and document. I am available to have those discussions.

- Wes Webb: That is a requirement to provide. We have it with SoyMor and Exxon.

Andy Henschel: Add a weather station on site?

- Adam Hamberg: Yes, for air quality measurements.

- Jeff Laskowske: It can be on-site and look at wind drift for emergency management. Metering equipment that tells you where it's potentially going. Raise Systems company makes mobile units that monitor the area. With lithium-iron, most everything is lighter than air, so it will rise up and out. Put these monitors near the schools or residences. Verify bad air quality is not getting there.

Adam Hamberg: We're not going to know what needs to be done for evacuation. Someone would have to experience the catastrophic failure for us to learn from it.

- Dan Pfeiffer: One potential mitigation is for the proposer to use their knowledge of the industry to build that emergency management plan. Then there can be incremental updates.

- Adam Hamberg: Glenville fire, if they see something they're going in to investigate. We learned not to kick doors in to let oxygen into the fire, we need education like that. State patrol will want to know if they see something irregular.

- Dan Pfeiffer: Can we add signage of who to call, similar to a railroad?

Mike Lee: How many of these BESS facilities are in tornado areas or hurricane areas? Do we have data from that?

- Dan Pfeiffer: There is a link that talks about that in the task force materials.

Adam Hamberg: I don't think anyone is opposed to this, we're opposed to it being on a water source, we're the only BESS project right on the water. That is a general concern. We allow this, now that opens the door to future facilities to be built on water. We're not going to know how to respond to that, how we would need to address that.

- Jim Sullivan: There is an MPCA spills response unit and program. They are very responsive to situations like this.
- Jeff Laskowske: They came when a train derailed in Moose Lake.

Dan Pfeiffer: To wrap up, think about the other impacts. Especially on the water side, next time we'll have that discussion on mitigation measures that should be in the EA. We'll talk about noise, aesthetics, lights, impact to the area, archaeological concerns.

If you find other viable alternatives, bring that in. The plan is for Zan to draft a report that will be distributed. We don't need consensus; everyone can review and add comments. We try to identify the things that most of us agree are impacts and mitigations to be considered. Everything else will also be included. One-off thoughts will be there, too. Full record of discussions.

- Jim Sullivan: Task force report will be an attachment to the EA.

Adam Hamberg: Adam Hamberg and Jeff Laskowske will not be at the next meeting.

Appendix E – Advisory Task Force meeting #3 agenda, slides, and meeting minutes

MINNESOTA
PUBLIC UTILITIES COMMISSION

Midwater Battery Energy Storage System Project Task Force

Meeting #3
September 16, 2025
11:00 a.m. to 2:00 p.m.
Freeborn County Courthouse
411 Broadway Ave S, Albert Lea, MN 56007

AGENDA

	Activity	Time
1.	Welcome and agenda review	11:00 a.m.
2.	Recap task force ground rules and mission	11:05 a.m.
3.	Recap task force meeting #2 and mitigation measures discussed	11:10 a.m.
4.	Discussion: Additional mitigation measures	11:15 a.m.
	BREAK	
5.	Continued Discussion: Additional mitigation measures	12:30 p.m.
6.	Discussion: Additional viable alternative sites (if needed)	1:00 p.m.
7.	Discussion: Task force report, final comments	1:15 p.m.
8.	Next steps	1:50 p.m.
9.	Adjourn	2:00 p.m.

Thank you

MINNESOTA
PUBLIC UTILITIES COMMISSION

Project Task Force
Midwater Battery Energy Storage System

September 16, 2025

	Activity	Duration (minutes)	Start Time
1	Welcome and agenda review	5	11:00 a.m.
2	Recap task force ground rules and mission	5	11:05 a.m.
3	Recap task force meeting #2 and mitigation measures discussed	5	11:10 a.m.
4	Discussion: Additional mitigation measures	65	11:15 a.m.
	BREAK	10	12:20 p.m.
5	Continued discussion: Additional mitigation measures	30	12:30 p.m.
6	Discussion: Additional viable alternative sites (if needed)	15 (if needed)	1:00 p.m.
7	Discussion: Task force report, final comments	35	1:15 p.m.
8	Next steps	10	1:50 p.m.
9	Adjourn	0	2:00 p.m.

Work of the Task Force

- **Roadmap**
  - Meeting #1 – July 24, 2025: Review project and process; identify issues and impacts to be analyzed in environmental Assessment (Charge 2-5).
  - Meeting #2 – August 22, 2025: Discuss issues and impacts (Charge 2-5); identify mitigation measures; identify viable alternatives (Charge 1).
  - **Meeting #3 – September 16, 2025: Discuss viable alternatives (Charge 1); discuss mitigation measures (Charge 2-5); discuss task force report; wrap-up.**

Work of the Task Force

Task Force will examine and make recommendations on the following:

1. Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation that should be studied

2. Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives

3. Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility

4. Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties

5. Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services

Mitigation Measures for the Environmental Assessment

- **Potential mitigation measures identified in Task Force Meeting #2**
  - Emergency preparedness measures
    - Emergency preparedness plan from the developer (evacuation plan, gallons per minute waterflow calculation for firefighters, environmental mitigation plans)
    - Training for fire fighters and emergency services
    - Signs with emergency contact information on the premises ("who to call")
  - Additional safety equipment
    - Mobile weather monitoring equipment for emergencies
    - Biochar filter in stormwater installation
    - Video streaming equipment on site
    - Dry hydrants

Mitigation Measures for the Environmental Assessment

- **What are some additional mitigation measures to discuss?**
  - Potential topics:
    - Noise
    - Aesthetics
    - Human settlements
    - Water resources
    - Site operations
    - Decommissioning

10 Minute Break

Viable Alternative Locations

Considerations for viable alternative locations

Operational Area

The operational area is defined as a one-mile radius from the substation.

The following areas are not available: the City of Glenville, the Shell Rock River, Shell Rock River floodplain areas.

Additional Costs

HVTL installation typically costs $2 million/mile. This does not include pre-installation costs like land purchase, permitting, and engineering.

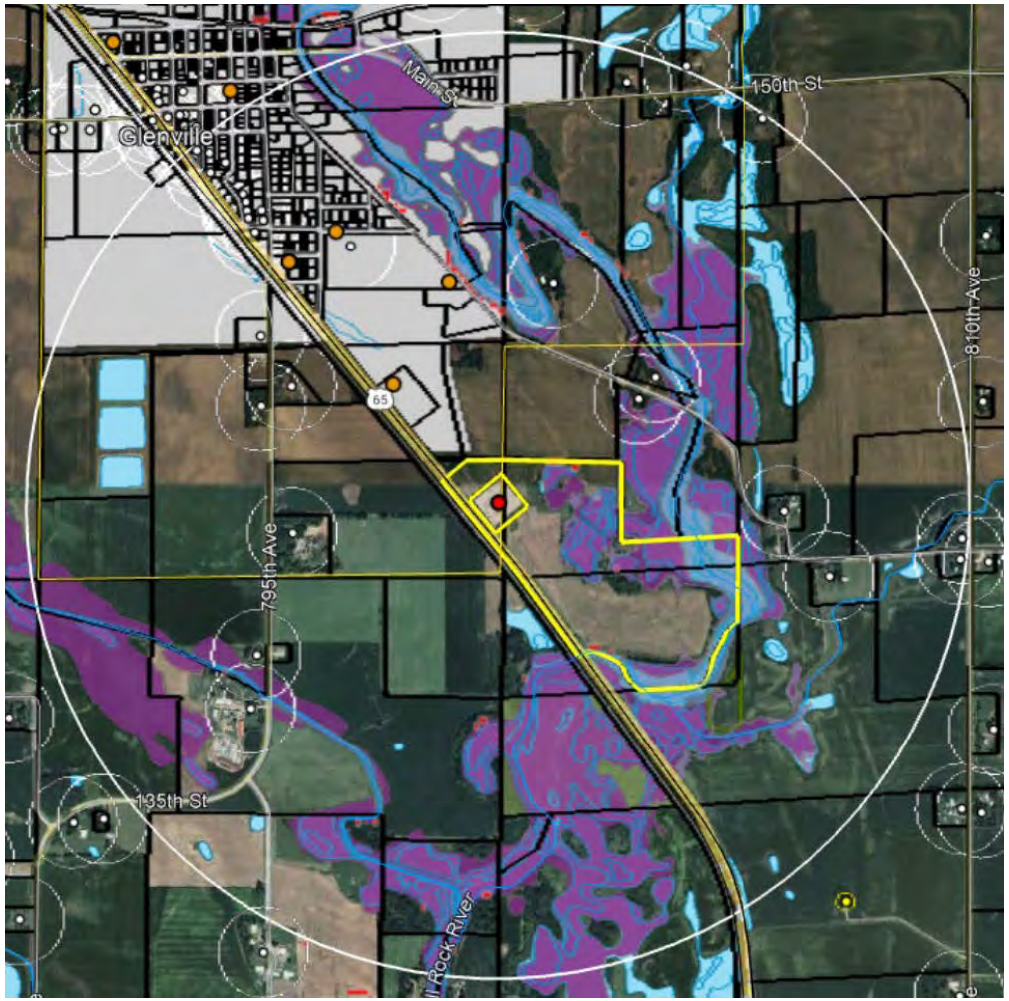
Available Land

Proposed land would have to be available to purchase and provide an unobstructed connection to the substation.

Interconnect

The current interconnect with Midcontinent Independent System Operator (MISO) needs to remain intact with no additional connections added to the project.

Viable Alternative Locations



- Proposed BESS site
- City of Glenville
- Shell Rock River and associated floodplains
- Glenworth substation

Discussion of Viable Alternatives

- **Are there additional viable alternatives to discuss?**

Next Steps

1. A final report will be compiled based on the discussions of this task force.
2. Task force members will have the opportunity to read and comment on the final report.
3. The task force report and comments will be attached to the Environmental Assessment (EA) conducted by Public Utilities Commission (PUC) staff.
4. The EA will be submitted to The Commission at the PUC, along with all of Spearmint Energy's permit application documents.
5. The Commission will make a permitting decision.

MINNESOTA
PUBLIC UTILITIES COMMISSION

Midwater BESS Project Task Force

September 16, 2025

Attendance:

Task force members in attendance:

- Melanie Aeschliman — Freeborn County
- Nicole Eckstrom — Freeborn County
- Mike Frank — ITC Midwest LLC
- Tim Kaasa — Shell Rock Township
- Mike Lee — Shell Rock River Watershed District
- Rich Murray — City of Albert Lea
- Wes Webb — City of Glenville

Also in attendance:

- Trevor Bordelon — Freeborn County Environmental Services Organization
- Jacques Harvieux — Minnesota Public Utilities Commission
- Tom Kaiser — Zan Associates
- Courtnay Lenz — Good Steward Consulting
- Mary Matze — Spearmint Energy
- Dan Pfeiffer — Zan Associates
- Jim Sullivan — Minnesota Public Utilities Commission
- Javier Whitaker-Castañeda — Zan Associates

Not in attendance:

- Jeff Fields — IBEW Local 343
- Adam Hamberg — Freeborn County Sheriff's Office
- Andy Henschel — Shell Rock River Watershed District
- Jeff Laskowske — Albert Lea Fire Rescue

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Presentation

Tom Kaiser: [Tom kicks off the meeting.] We are exactly where we should be in this stage of the game. You all have done a great job raising questions that will go into the report at the end of this task force. It sounds like the guest speakers at the last meeting was time well spent. The last two meetings have given us a solid roadmap for what to discuss at this meeting.

I want to reiterate that we don't all need to agree. We're going to go back through some of the things we've discussed and make some final recommendations to the report. We're going to start by recapping what are our tasks and what are the outputs.

We'll review mitigation measures from the last meeting and discuss the mitigation measures that we haven't had time to discuss. Then we'll get into viable alternatives if there are recommendations. I know that's less concrete than the other topics, there is no expectation that we have to come up with viable alternatives. Then we will see if there are any other additional topics that we haven't covered yet for the final summary.

It's not part of the process for the applicant to come with a portfolio of additional viable sites. If we do want to comment on the state's process, we can add that to the report. Don't hold back if there are any issues regarding the project and also the process.

At this meeting, we want to go a little deeper on the topic of additional mitigation measures. The task force will examine and make recommendations on the following five points:

1. Identification of additional viable sites or routes in close proximity to the ITC Midwest Glenworth Substation.
2. Identify potential appropriate permit conditions to mitigate stormwater runoff at the proposed site and any viable alternatives.
3. Identify potential appropriate permit conditions to mitigate local emergency response to any emergencies at the facility.
4. Identify potential appropriate permit conditions for setbacks from residences, schools, and commercial properties.

5. Facilitate conversations with the City of Glenville and Freeborn County on any potential advantages for this economic development project being within city municipal services.

Some potential mitigation measures that were discussed at the last meeting included:

- Emergency preparedness measures
    - Emergency preparedness plan from the developer (evacuation plan, gallons per minute waterflow calculation for firefighters, environmental mitigation plans)
    - Training for firefighters and emergency services
    - Signs with emergency contact information on the premises ("who to call")
- Additional safety equipment
    - Mobile weather monitoring equipment for emergencies
    - Biochar filter in stormwater installation
    - Video monitoring equipment on site
    - Dry hydrants

Discussion (Additional Mitigation Measures)

Tom Kaiser: Some additional mitigation measures topics that we could discuss today are:

- Noise
- Aesthetics
- Human Settlements
- Water Resources
- Site Operations
- Decommissioning

Dan Pfeiffer: One of the first things to talk about would be in the water resources realm. Andy sent some topics by email. His materials discuss rainwater management, making sure we're covering for the 100-year event and all the way up to the most frequent rain events. The second thing was protecting the stormwater runoff; if there is a negative event, how do we protect the river from the runoff that may or may not have pollutants in it. Andy's document covered those two topics: there's the normal everyday operations side, he sent an example with biochar, and then there's the responding to the emergencies side.

Tim Kaasa: I'm still concerned about the "what-ifs" of it all. One of the concerns I have is if we have runoff and we get some pollution into the river or the groundwater. I sent information about the mile-and-a-half area of well water protection. That isn't something you want to wait to go through a legal process to see who's liable before cleaning things up. What is the immediate plan for at least the drinking water? There are two wells in Glenville within a mile-and-a-half of the site. What is the immediate response, the next day or two days after an incident? Is there a fund that the applicant can build so if there is a problem it can be taken care of right away?

Jim Sullivan: Is there a well water protection plan for Glenville?

Wes Webb: The topic comes up every few years. We go through the work and then the state drops it.

Jim Sullivan: The water planning stuff is a little messy. I'm asking to see if the other businesses in Glenville have water protection regulations.

Tim Kaasa: I know that for farmers, the nitrogen application in the fall is restricted in certain areas. For this project, one of the what-ifs would be a contingency plan to get that stuff immediately taken care of.

Tom Kaiser: When I think about the what-ifs, it sounds like the potential for a biochar filter was a consensus. This is an opportunity if anyone wants to speak for or against that.

Nicole Eckstrom: I want to point out that Trevor in the corner of the room is one of our environmental services staff. Trevor might be able to look up information quickly during this meeting. I'm curious, again, we had talked about ponds with a gate, lined ponds. For me as a commissioner, not having that specific expertise, I would just want something that is as foolproof as possible. My thought was that with the pond and the gate, if you have water pooling there, it's going to be easier to test on a daily basis and after an event. I don't have the expertise to say what we need to do.

Dan Pfeiffer: We're identifying potential mitigation measures that could be studied. We have an idea of the impacts. When the PUC starts developing the EA, Jim will reach out to technical experts, and ask if there are other mitigation measures they recommend.

Nicole Eckstrom: Is there gasoline on site?

Mary Matze: Diesel. There's main power transformer that has mineral oil that lubricates parts of the power transformer. They're typical for any substation.

Nicole Eckstrom: These aren't additional tanks brought in?

Mary Matze: There will be an additional tank, we need a project specific substation to transfer the energy to the substation that's already there. That substation also has oil on site.

Nicole Eckstrom: Would they want to line underneath to catch all drips and protect the soils? I want to see whatever it is that would have the maximum protection.

Jim Sullivan: The oil you're talking about is mineral oil? Not diesel? Are there any backup generators that require diesel fuel? I want to be clear about what tanks we're talking about.

Mary Matze: I don't know. The application considers the worst-case scenario. It is called out in the specs as mineral oil. I am happy to provide more information about that later.

Mike Frank: On the transformer, a lot of times it's based on capacity. It acts as an insulator for arcing. Based on the capacity, that helps determine what's needed around it. Some larger ones will have a built-in containment underneath, sometimes concrete. I can't say for sure what volume level requires containment.

Dan Pfeiffer: Identifying that groundwater impact is a significant concern for this task force. In the EA there would be a focus on groundwater so you'd get a picture of what that looks like for infiltration. Then you'd get a sense of what the mitigation measures could be. Groundwater is one of the key concerns, in the EA they will use technical expertise to evaluate it.

Jim Sullivan: For volume, is it 100,000 gallons of oil? 10,000?

Dan Pfeiffer: In the river we have the considerations of the stormwater and the drinking water.

Tim Kaasa: I went to the PUC meeting in St. Paul. It's a new technology, people are nervous about it. It's the guinea pig situation. Like Andy said, runoff is going to get into the river anyway. But if it's further out you have a better chance of dealing with it.

Tom Kaiser: So, what I have heard so far: potential for a biochar filter. Potential for a liner underneath the entire site. There was a lot of discussion about significant rainfall events. The first inch of water traditionally contains the bulk of pollutants at any site, whatever kind of pollutants. One inch of water retention would be the requirement for this site, this type of project. The watershed wants to see 1.25 inches. Other places have seen as much as 1.5 inches. It sounds to me like the group might be comfortable with a number higher than one inch. That's been part of every meeting, can we turn that into a recommendation?

Mike Lee: 1.5 inches might even be better. Andy brought up the biochar, anything we can do if there is an accident so we can catch these pollutants before they get into the river. Commissioner Eckstrom said you need a liner all the way around. It's on sandy soil. We need to take extra precautions to make sure we're protecting the Shell Rock River Watershed.

Tom Kaiser: It seems like a unanimous agreement to see a higher standard. Does anyone disagree or have another idea?

Tim Kaasa: To catch 1.5 inches of rain, it's obviously going to be a big pit. When looking at the size of the site, you get the three-inch rain, is that going to go right up and over the side? Or are there multiple ponds that it filters through? I can't see 1.5 inches being big enough. Who's the engineer that puts the signature on that, to say this sized pond can do the job? We've had 10-inch rains, even a 12-inch rain.

Tom Kaiser: It's not about predicting the largest possible rainfall, it's about what is the contamination level of the rainfall that exceeds 1.5 inches. We don't need to be scientists or engineers; we can ask the technical experts what is an appropriate mitigation measure for this site? Jim, anything to add?

Jim Sullivan: When we're talking about the one-inch rainfall, we will design a basin that has the ability to hold that volume of water. The question is, are you designing it to manage the status quo of business operations, versus to manage an incident or a spill? Now your management is different because you want to constrain that flow, stop it from getting to the river with the gate. They went with one inch, you're saying do something more. That's certainly reasonable. In terms of the carbon filtration system, that's a drop in component, that's also reasonable.

I heard the conversation about monitoring. The question I have is who would review the data, what are you looking for? Is it incident only monitoring or is it business as usual? In that situation there are factors that come into play like cost. Are there some thoughts around that?

Nicole Eckstrom: This comes out of some of our discussions from the planning commission where we are developing new ordinances. We are thinking of third-party monitoring. For contaminants, are we tracking soil samples and water samples to find out what are the contaminants, if any? Are they leaking bits of glycol, is the water full of PFAS? I wouldn't want it monitored only after an event. An event could be rare while environmental contamination is happening all along. Even if it's yearly monitoring, every month might be ridiculous. It would be educational for everybody since this is a new technology, see if there are spikes during certain seasons. Who would they report that data to? Perhaps to the MPCA, perhaps local services or the local county board. The information should not be kept secret. It's their environment where they live, the local officials will know whether that's acceptable. By the time the information trickles down from MPCA, it's too late. These are concerns that residents would have immediately. I would say not to have local officials cut out of those results. Does the data have to show up the day after? Two weeks might be too late. On the planning commission we talked about what is reasonable.

Dan Pfeiffer: Didn't the watershed district discuss regular testing?

Jim Sullivan: The local watershed monitors and collects data.

Nicole Eckstrom: They monitor the river, what about the containment ponds? The sediment in the ponds? How much of that stuff is washing right off of the equipment into the ponds. It's more diluted in the river.

Jim Sullivan: For sludge management for that system, task force can express our concerns. That might include additional work. You mentioned emergency response; the MPCA can be rather quick. In terms of the notification, having that laid out locally, more so that it is right now. I want to raise one more question. How frequently are the smaller local wells tested? Is there an expectation that well owners test?

Wes Webb: Ours [city wells] are tested monthly. Private wells, that's where there is a disconnect. They don't have resources to reach out to. There have been rural wells tested that have high levels. What do we do about it?

Jim Sullivan: It's helpful if there's a baseline to compare it to in case of a spill. Do they test for Ag-Chem? Some of those wells are shallow. Are you getting any contamination?

Wes Webb: We have testing data.

Trevor Bordelon: Our office offers testing, but we are more on the real estate side. We have the ability to do testing, the standard testing is for nitrates, chloroform, and lead. Cost is around $65, each test adds it's own cost. We have a baseline.

Melanie Aeschliman: I was concerned about having the baseline. But what if the city does flag something; then it's on the city to deal with it. I like having the state having the leg in that game for support, so city and county don't have to clean up.

Nicole Eckstrom: What can be done to make a company have a particular bond amount if there is contamination due to the company's actions, so it doesn't fall on the taxpayer and the county?

Tom Kaiser: Water is the most difficult recommendation to make. What are the tangible things? The biochar filter is something that we agree on, it's effective, not too costly, and the watershed approves.

Mike Lee: Yup.

Tom Kaiser: We are in agreement that one inch is not enough. I don't know if our report needs to call out a specific number, or at least 1.25. Can we move on to non-water topics?

Dan Pfeiffer: Our report will also include baseline data, monitoring, and a recommendation for gathering that baseline data so it's known ahead of time, how that data is distributed locally so everyone is informed. The PUC can see that as a permit condition. Also, what if there is contamination, what is the contamination response plan and protection for taxpayers? PUC has that expertise. We can lay that out in the report.

Tom Kaiser: Also thinking about decommissioning, being careful to underscore concerns that this could become a local taxpayer burden. Both for decommissioning and in the case of some sort of catastrophic event. I don't know if there are other issues other than what Dan said.

Wes Webb: I'd like to bring something up, sometimes when we are talking about potential contamination releases. We're faced with a double standard: we have 7 miles of I-35 within Glenville, a tractor trailer rips open a fuel tank, diesel and antifreeze spills on the highway. It was decided that the county was going to be proactive and invested in absorbent devices. We don't carry them anymore because we were told not to by the state. The emergency vehicles need to reach the crash site. So MnDOT said no. Ok, then 100 gallons of diesel and antifreeze goes into the ditch and into the river. This is not a once every ten-year occurrence, these crashes happen all the time. One year it was every three weeks. We had this standard developed, and it was shot down.

Tom Kaiser: Thanks for mentioning that, we can turn that concern into a recommendation that prioritizes immediate action.

Wes Webb: Having some contaminants get to the river is probably more common than what people may think. It's not good but it's a fact of life.

Dan Pfeiffer: What recommendations can we make to minimize and mitigate? Knowing that we can't completely prevent anything from happening. One of the things from a spill perspective is, if you're not carrying that type of spill protection equipment. Would the BESS site need to have some?

Wes Webb: We would gladly carry it, but the state agency said don't.

Dan Pfeiffer: Is it something we need to recommend that they have it on site? I don't know what the protocols are.

Wes Webb: We have it at the fire station, hasn't been used for some time.

Jim Sullivan: There wouldn't be any state agency in this case, operator's responsibility.

Mary Matze: Some of these materials are biodegradable. In terms of a condition, the site could commit to using a biodegradable product.

Dan Pfeiffer: Aesthetics, Tim had some photos to share. [Tim shows photos and video of the site taken by drone].

Melanie Aeschliman: How big is the vacant site?

Jim Sullivan: 7 acres.

Melanie Aeschliman: Are there any plans for the remaining land? Any other renewables?

Mary Matze: No plans, we only do batteries.

Tim Kaasa: It is a peninsula, surrounded by river on three sides.

Nicole Eckstrom: Can we share this video with the PUC? I don't know if any other commissioners besides Tuma had been to the site. To see it from this vantage point is amazing.

Jacques Harvieux: You can't hand the commissioners a flash drive. You can put it on the internet and then link it to the public file into the report.

Dan Pfeiffer: Photos are easy to embed, if it's a shared video link, we can do that. It will be a part of the report.

Tom Kaiser: Perfect segue to noise and aesthetics. This site will generate a given amount of noise when charging and discharging. In terms of aesthetics, it's not that there are other active land uses adjacent to the site, but we are looking to preserve the look and sound of the river for people recreating.

Wes Webb: There are not very many people on the river. Our prevalent wind direction is from the south. That came up during the ethanol facility discussions. It's going to carry noise to the north where houses are. I find it hard to believe all batteries would charge at once or discharge at once, it will be a staggered system. Noise mitigation is important.

Nicole Eckstrom: I thought also about the cooling systems. The glycol through there, will that create noise?

Mary Matze: Yes, there are fans. The noise is minimal.

Tim Kaasa: It's a hunting zone through there, land is in the reservation preserve.

Dan Pfeiffer: How about the view from the road?

Tim Kaasa: It's far enough from the road. On the backside, you might have people who live over there. That thing could be on 24 hours a day at 50 decibels. I can listen to the nearby turbines, when wind's not blowing, it's fine. That south wind.

Mike Lee: Turbines had to be setback a quarter mile. This site is closer than a quarter mile to the nearest building.

Dan Pfeiffer: Does the EA do the same as transportation projects where you do a monitored baseline and compare it to technical specs?

Jim Sullivan: We do modeling. We could potentially lay out the baseline conditions for noise.

Dan Pfeiffer: From my experience, people think it's quieter where they are than what actually gets measured. You don't quite perceive it to be the same level. Someone measures for an hour or a 24-hour period for an average. Then creates a model from that.

Nicole Eckstrom: One of the things I noticed when they did a noise test, the timing is important. When the grounds are moist and there are lots of crops in the ground, it's not going to be as accurate. I'd like to see modeling and a before and after test. That needs to be considered, testing without crops to dampen the noise.

Melanie Aeschliman: Wind farms are about 50 decibels. If there are residents unhappy with that, this is also 50 decibels. It will have an impact.

Mike Lee: Windfarms have a quarter mile setback.

Dan Pfeiffer: Once you get the baseline you can overlay the technical data, get a model of how far sound travels and how it dissipates.

Trevor Bordelon: We're looking at developing an ESS ordinance. Here is the requirement for a landscape buffer for an energy storage system:

I. The landscape buffer shall consist of three distinct rows of plantings.
II. The buffer must provide visual screening and glare minimization of the Energy Storage System throughout all seasons to the greatest extent reasonably possible.
III. The vegetative landscape buffer must have a minimum height equal to that of the top of the highest component within the Energy Storage System (excepting incidental equipment used for communications equipment or other accessory uses) within two years of the original planting.
IV. A continuous, maintained grass cover must be established and preserved throughout the buffer, including beneath and in-between the trees and shrubs, to enhance soil stability, water filtration, and overall aesthetics.

The planting species has to go through our field office. These requirements are for under 10 megawatt projects.

Tim Kaasa: What if this is built and we do this noise testing, and it doesn't pass? How do we enforce the noise barriers?

Jim Sullivan: If we ran into something that created modeled issues, it's on the applicant to mitigate. Something related to noise reduction technology, muting or baffling. That certainly is something that needs to be considered. Maybe switching out the fan. The applicant can come up with reasonable alternatives. The model is informing whether they need to do more or if that's enough.

Tom Kaiser: Aesthetics are a little bit more tangible. Fencing, planting. Black or green in terms of opacity of fencing. How stringent do we want to be? Any more specific thoughts on visual screening?

Dan Pfeiffer: Trevor mentioned it's being drafted, we can recommend that it follows that drafted thought. Three rows of plantings, etc. It comes down to the PUC to make that a permit condition.

Wes Webb: Who knows what kind of project will come in the future. We need to set a precedent.

Tim Kaasa: At the public meeting, Tuma said, "There's one coming to your town," since it's a growing technology. But why right next to the river? If this one is approved, there's the precedent for putting them by the river. We don't have grid issues here, why aren't they building that thing where the power is needed. If you come up with the standard, they're going to want to have the mitigation measures for sound near urban areas.

Nicole Eckstrom: Even though it's in a draft form, let's use that wording as Trevor said it. Trevor can give that exact wording.

Natural vegetation promotes wildlife habitat, pleasant for viewing if it's done properly and maintained. It can help with noise. I want to recommend that.

Jim Sullivan: Do you know when that's final? Commissioner Tuma will ask about that.

Trevor Bordelon: We just put the moratorium on the last ESS. It's hard to quantify when the new one will be finalized.

Jim Sullivan: Do we have draft language? Is it public?

Nicole Eckstrom: No.

Jim Sullivan: That's helpful to know.

Nicole Eckstrom: It is total draft form, we are going from the beginning of the ordinance and working a few pages at a time. I'd hate to be silent on something in the ordinance and make you think that we don't care about it. For example, the draft says shoreland would be permitted, but we don't want it there.

Dan Pfeiffer: In the advisory task force, we get to say, "Here's what the task force recommends". We can say that the county is working on the ordinance, and here's what is in there for consideration. It's different than saying, "Follow the county prescribed ordinance". But it gives the opportunity for the PUC to look at it. It might not come out to be the exact same way. The county is actively thinking about these things. And we can tell the PUC "Here's a recommendation"

Jacques Harvieux: I don't know the timeline for your report. My timeline is I wait for your report, then start public hearings. The best timing for recommendations is during the public comment period. Within the next two to three months, make that language public. Having it not be public does not mean you can't recommend it, but the PUC is not going to know how to be consistent.

Nicole Eckstrom: The clause that Trevor just read. That won't have controversy. Our planning commission only meets once a month. Is that something that Trevor can read from our draft so it's part of the record. *[See page 12 of the meeting minutes]*.

Dan Pfeiffer: Other recommendations don't have to be grounded in a county ordinance. It's in our task force report; we make these recommendations. We can say, "Here PUC, here are the recommendations we made on the questions you asked us." They think about what actions they want to take within their own framework.

Jacques Harvieux: If you want your draft language specifically in the permit conditions, that's the 2-3 month timeline.

Jim Sullivan: Commissioners can look through everything and can pull things together.

Dan Pfeiffer: In the draft report, we'll do an internal task force review before sending to the PUC. Not wordsmithing, but any big things we might have missed. Send it as an email or a letter back to us [the Zan team writing the report]. Some of those things will be documented as "changed" in the report. All your comments will be appendixed in the report. The PUC gets the whole thing: the report, meeting notes, slides, and comments from task force members. That is all there for PUC to consider. That's why we don't need unanimous consensus. The purpose of this report is to support the EA. Stormwater is a concern, they'll consult technical experts.

Jacques Harvieux: The point of making the public hearing period. An administrative law judge's opinion is not asked if the language isn't there. The PUC needs the information before talking to the judge. If you can't make that date, we'll still have a recommendation.

BREAK

Melanie Aeschliman: If the PUC doesn't support the ordinance option with plantings, if we are talking about fence colors, we should go neutral. Not orange.

Nicole Eckstrom: Unobtrusive colors, not reflecting natural sunlight. We're adding that to the ordinances.

Tom Kaiser: Is it fencing? What level of opacity do we want? Do we want it entirely screened by plantings? Fence heights? Is there a specific view, even a decade or two from now, that we want to protect? Are we recommending a fence, plantings or a combination?

Mike Lee: Being rural and next to the river, plantings would be more ideal than a fence. If you use a windbreak around the farms and homes. Better to have natural.

Tom Kaiser: Fencing design to obscure a view is generally coated or a mesh chain link fence. Something like that might age poorly.

Wes Webb: I assume there will be fencing for security reasons? We can add plantings to cover up the fence.

Tom Kaiser: How about one step further than screen with plants? Are we trying to obscure it entirely?

Nicole Eckstrom: To reiterate the wording that Trevor had used, we want it at least as high as the highest structure.

Mary Matze: The highest structure will be the poles. The containers are about 10 feet high.

Mike Frank: When we plan compatible species, we need to be mindful of the transmission lines and compliance of clearances underneath the lines.

Nicole Eckstrom: I wanted to mention, since we're on noise and aesthetics, Samantha Bump from the DNR said they don't have the baseline data yet on the BESS. With the drafting of rules around this, we need to do everything to mitigate noise and protect wildlife and residents. They said there is not data there yet, which is a concern since the BESS is going in this area.

Tom Kaiser: Combining an intent or desired outcome with something that can be rooted in data, that's helpful to have both. What are we trying to achieve with the mitigation? Pairing any sort of data that we can incorporate with what are we trying to achieve is helpful.

Nicole Eckstrom: Jeanine Vorland from the DNR, this area is her area of expertise. I had a conversation with her about how the noise can effect insects communicating with one another. We always think about bigger mammals, she had talked about how sensitive insects can be. I'm sure it's not going to be dead silent, but as close as we can get. Just understanding that, in this area, how sensitive the natural environment will be to any disruption.

Tim Kaasa: Here are some of my disappointments in the process of this project. DNR statements come from St. Paul. When looking at the future, we have local people down here who understand. Local officials need access to the information, let's make a recommendation that a note is sent to the county commission and the township in case of an event. Work with the legislators on something like that. We're going to try to drive something legislatively. And as a heads up, Commissioner Tuma said the task force meeting should have been held before any public meeting.

Dan Pfeiffer: Turning to impacts to human settlements; there's proximity related to fire and emergency management. Any other impacts? There's the hunting range that might change from shotgun to rifle.

Wes Webb: That change didn't go through.

Nicole Eckstrom: That will come up at a future workshop, if we're adopting an ordinance or not.

Dan Pfeiffer: Any concerns about archaeology or any sites like that?

Tim Kaasa: There's some stuff south of there. Two burial grounds that are documented south. The Indian village south behind Lady Foley's place. Some people have collected flints, they're there in the archaeological study.

Jim Sullivan: I have that in the EA; it is public information. This was already in the public domain, so there's nothing I will do differently handling it. Spearmint did a shovel test at the site, which Freeborn County would've done. They did 120+ excavations in that area, no sign of flint or anything. It has been agricultural for decades, no concerns in the Freeborn County data or what Spearmint provided. Probably not an issue on site but there is a lot in the surrounding areas.

Dan Pfeiffer: Usually there are reporting processes during constructions if anything comes up.

Trevor Bordelon: Is there anything with stray voltage testing? We do have dairy operations nearby.

Jim Sullivan: It's a short run line from the battery, and from the project substation to the city substation. It's a bigger issue with distribution lines. With transmission lines, I have not encountered anything like that. It's certainly something we can look at in the EA. I don't feel the need to do baseline testing. I know dairy folks are more sensitive to this topic. Usually when I see a problem it's either a distribution issue or something that wasn't constructed correctly on site.

Nicole Eckstrom: Some other ordinances, we do already have quarter mile setbacks from dwellings. That ties in with human settlements. I don't recall what the exact distance was from the next structure, but we want to make them consistent with our energy-producing technologies ordinances.

Trevor Bordelon: That's probably our max setback for a big system. For smaller solar projects, it's different. This probably meets that quarter of a mile. That would be in the draft. Similar projects already in our ordinance use that quarter mile.

Dan Pfeiffer: We can use different language for what's being developed than what's in practice.

Tom Kaiser: Site operations and decommissioning, we've already covered the desire to limit liability for local taxpayers, a bond amount or escrow set aside. What else can we discuss?

Wes Webb: I feel that they'll be a responsible company. There has to be funding there to remove the structures if the company walks away. That should be with windmills and solar too.

Mike Lee: I agree, there needs to be something in place. It shouldn't fall on Freeborn County. There needs to be a bond.

Nicole Eckstrom: I support making sure that all structures are completely removed in decommissioning. I know they claim there will be value in the batteries at some point. I don't want to see the pedestals left on site. After decommissioning we need soil testing and soil remediation. We've had to pay at the farmland site and other sites where companies have up and left. We can't develop that land for anything else. That would tie hand in hand with having adequate money there. Could they name somebody else as beneficiaries? The county? The farmland company went bankrupt and insurance didn't pay. We need to make sure the taxpayer is covered.

Wes Webb: It should be reviewed regularly, removal costs in 2028, or 2030 are two different things.

Tom Kaiser: Are we being thorough enough, too thorough?

Jim Sullivan: Most state agencies are not inclined to deal with bond issues. It's a hassle to activate it and permittees typically don't want it. We'll raise the issue, we'll certainly talk about it in the EA. The value of the dollar is something to consider. So far, the level of detail is appropriate.

Tom Kaiser: Let's turn the page to viable alternative locations. We acknowledge that this topic is more difficult. Some of us have expressed frustration at the process in general, I think those are all reasonable concerns. I want us to have the ability to comment on the process itself. Let's take a crack at if anyone has a specific location within our tetherball that is for sale? Anything worth consideration?

Wes Webb: The city's treatment pond location. There's a crick there, so it doesn't solve anything related to water issues.

Melanie Aeschliman: It brings additional revenue to your city.

Jim Sullivan: Looking at the charge, the viability of a site is probably beyond the task force's capability to make a call on. But if there's a piece of property that we can draw a box around to look at. The PUC isn't going to force anybody to provide alternatives; we don't do that. Is there something I can draw a box around that the PUC can evaluate? If there are attributes here that make this location maybe not that favorable.

Nicole Eckstrom: So, with that criteria that has been forced upon the task force, when I looked at the map with the tether line. I want us to consider going as far as possible from the river. If you follow Highway 65 all the way down and try to be on the east side of the highway, further away from the area. We're not real estate agents and elected officials shouldn't be trying to convince landowners one way or the other.

Jim Sullivan: The task force might conclude that we can't draw a box.

Tom Kaiser: How much of a barrier is Highway 65? The main concerns are the river, the school. Can Highway 65 be crossed with a transmission line?

Jim Sullivan: There's also the railroad to cross. It's not impossible to do that, it has been done. It will add more cost. It's a piece of property you don't own, so there are issues of eminent domain.

Tom Kaiser: It is an unusual situation. It's a private enterprise, not a government agency, asking for permission. It sounds like an insurmountable barrier, but I don't know that for certain.

Wes Webb: We bored a sewer line underneath the rail line. There were fees. It didn't take many years, just a lot of work for a year and a half.

Dan Pfeiffer: One thing I think about, especially with the tributary by the treatment plant. The watershed is kind of circling the area, the viable alternative sites have the same impact concerns.

Wes Webb: I think the location is fine, it has to be built correctly with liners, good construction.

Tom Kaiser: What else comes to mind looking at the map?

Tim Kaasa: I personally don't think it's a good location. When we asked the question of the applicant, what can they live with? Usually, the first mile of transmission line is where all the expense is, after that it's time and material. I don't know why we can't look at the ethanol plant or north by the Albert Lea ponds. They're selling that land right now. The other question came up to me: there's other substations in Freeborn County, east of Hayward. There's literally nothing there. We understand it's more costly per mile, but at a different substation there's other soil types and the ground is level. The ponds and aesthetic mitigation measures have to be the same. But when you have the ability to catch this stuff and stop runoff, that makes more sense. I'm not against the technology. But it sets the precedent.

Dan Pfeiffer: I think one of the early discussions we had was about the interconnect permit, they do their due diligence and propose something. Whether it's the site we would choose, that's not really the question. My understanding is that the distance also means an additional question for the interconnect permit.

Mary Matze: To be truthful, the mile is not a hard and fast boundary. All of the intermediary land use parcels with multiple landowners who may or may not be willing to sell. We find there is high opposition to transmission lines. Technically, you can go as far away from that station as you can build a line. But then we are doubling up, and we cannot break a line without interrupting our application. There are tradeoffs that you could make. Could we go all the way up north? Sure, but then there's transmission line all the way through the county. You need a substation that can handle the capacity of the BESS. There is a limited number in this county. Then there's the Interconnection Queue Process.

Tim Kaasa: It's either all or nothing, you need alternate sites.

Nicole Eckstrom: When we compare this to other sites we've seen photos of: Arizona and Byron. Those are not close to water or communities. When we talk about the application process, it could be further than a mile when we were specifically told to look at one mile.

There are additional costs related to transmission lines, etc. But those were poor business decisions that Spearmint made at the cost of environmental catastrophe and the other things we've been talking about. I get that it's more expensive, but if it solves more of these problems and if Spearmint pays more or moves somewhere else, it's worth it. We are not going to get the tax dollars that you get from solar and wind. The economic benefits aren't there for the county. To sum it up, I see it as a poor business decision. The county shouldn't have to bend over backwards and suffer to make it work for Spearmint. Looking at this mile radius, for anybody it should be a no-brainer that it shouldn't go in this mile radius. If it has to go to this substation, push further than a mile. Give people rent or something for the transmission line or put it along a county ROW. I don't see why it has to go in that spot.

Jim Sullivan: I'm going to the map for a second. Looking at the wastewater ponds, the last pond drains out to the river.

Tim Kaasa: On the economic side, the assessor said he can't get anything. In terms of approximation, the income would be about $20,000 per year which is minimal. Batteries are basically personal property on the site. It's not a landfall of money for the county.

Mike Lee: As an employee of the Watershed, we feel that it is fine where it is as long as we put these stipulations. But as someone who grew up on the banks of the Shell Rock River, I'm not in favor of having it that close. They're going to do what they want to do. We have to make sure that the Shell Rock is protected at all costs. I don't want to hear about four inches of rain and now there's a big fish kill down to Iowa, and then the watershed is spending millions of dollars fixing it.

Nicole Eckstrom: We hear over and over again that the water and the soil is the most challenging aspect. It drives home the point that it shouldn't be sited in this area. We also need to look at big picture: precedent, but also looking at all the taxpayer money and how Minnesota values its natural resources. The Attorney General created a water task force that is meeting in June. To invest so much time and energy over decades, and this attorney task force, we all need to be on the same page. We've spent so much money cleaning up the water, creating that DNR management area. And then we put something here with the potential of negating some of that, if not all of it.

Mike Lee: There's going to be a lot more money spent on cleaning Albert Lea Lake.

Mike Frank: No additional comments from me. Spearmint has worked with us [ITC Midwest LLC], knows our requirements for setbacks and evacuation plans.

Tom Kaiser: I don't want to rush any conversations on water, any other thoughts? Sounds like there is frustration that there was not a menu of options to choose from. Nicole has expressed that this is not ethical or easy for the task force to identify alternatives. Are there any thoughts related to the process of how this worked?

Nicole Eckstrom: We need early notification of local officials, city councils, township boards, not just one commissioner. When the project was proposed, notify the local experts. You can never underestimate the value of input of people who have lived here for generations. Working with the local people first. They know the aspects, unique nuances of an area. Before we end up at this point. I'm thankful to have been invited to the task force, but this could have been smoother if consultation had been in an earlier part of the process.

Tim Kaasa: I want to echo the early notification of this type of group of people in the application process. We would have understood it better and maybe helped find an alternate location.

Melanie Aeschliman: I know the county has our hands full, MPCA, PUC all have hands full. But we need to be putting protections in place. Recommendations of what would be good ground to build on. Technology is advancing so fast, it's hard for local government to stay on top of it.

Nicole Eckstrom: The government is there to protect the people and the environment. There's no way individuals can keep up with everything that goes on. I strongly believe that companies, even if well-intentioned, will always put profits in front of the people. We need to protect the people and put policies in place and advocate for them.

Wes Webb: We are fortunate that we are dealing with this instead of a data storage facility.

Dan Pfeiffer: To summarize next steps: We will begin drafting the task force report. It includes discussion, recommendations. It includes meeting minutes and materials, there will be some internal review with Jim, then we will send it out to all of you. We will include instructions on how to leave comments, if there's something incorrect and needs to be corrected. Some will get added into the document, and all will be attached to appendix. That document is provided to the PUC for the EA. It ends up as an appendix to the EA. The PUC sees everything. There is a public comment period during the EA. You can provide public comment after submitting your task force comments. The PUC considers the EA and all the comments and makes a decision. We will draft over the course of a couple weeks.

Jim Sullivan: There is a hearing during the public comment period. You can bring documents or give testimony. It probably will happen in Glenville. If we've missed anything, you can put it in the public comments.

Dan Pfeiffer: Just because you're in the task force doesn't mean you can't submit additional comments as a member of the public.

Jim Sullivan: There's no expectation that the task force has to reconvene. Our meetings are complete today. The report really is the completion of the task force. The hearings for the EA are local. I did like the Glenville church location last time.

Tom Kaiser: I think you all represented the community and your constituents very well. It's good to learn about something that's coming to many communities in the future. We covered a lot of things, it was really productive, and we will bring something substantial to the PUC. Thank you.

Appendix F – Map of one-mile radius from Glenworth Substation

MINNESOTA
PUBLIC UTILITIES COMMISSION

MEMORANDUM

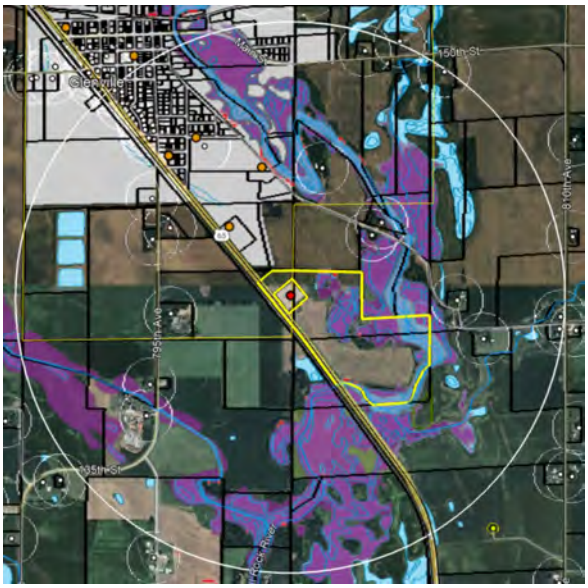
Date: **August 14, 2025**

To: **Midwater BESS Citizen Advisory Task Force**

From: **James E. Sullivan, Ed.D, Environmental Review Manager**

RE: Tether distance between Midwater BESS and Substation

Operational Area: The operational area is defined as a one-mile radius from the substation as the center point; however, not all the area within this circle is available. (See image below) The Shell Rock River and related floodplain areas, as well as the City of Glenville, are not available for the potential BESS relocation.
Cost: High Voltage Transmission Line installation for a system of this type is approximately 2 million dollars per mile. This does not include land purchases and related transactions, or additional land use permitting fees and studies related to survey, engineering, wetland delineation, cultural resources, sound evaluations and other required analysis of an environmental assessment.
Interconnect: Under this arrangement, the current interconnect application with Midcontinent Independent System Operator (MISO) would need to remain intact, meaning that no additional connections would be required to connect with the substation. In the event interconnect application changes would be needed, the application process would have to start over. The current timeline is five years, with costs in the millions of dollars.
Available Land: Proposed land parcels for the BESS facility and required transmission lines would have to be available for purchase and provide for a direct, unobstructed connection to the substation.



Note: Information on tether distance was provided by Spearmint Energy, Inc. on behalf of Midwater BESS, Inc.

Appendix G – Summary and comparison of grid-scale battery technologies for BESS facilities

MINNESOTA
PUBLIC UTILITIES COMMISSION

MEMORANDUM

Date: **August 14, 2025**

To: **Midwater BESS Citizen Advisory Task Force**

From: **James E. Sullivan, Ed.D, Environmental Review Manager**

RE: Summary of Grid-Scale Battery Technologies for Battery Energy Storage Systems (BESS)

Summary Points of this Memorandum

- The lithium-ion class of batteries is overwhelmingly the backbone of U.S. grid-scale BESS due to its fast, scalable, and increasingly affordable price, with nearly 25 GW deployed to date.
- Flow battery systems are beginning to enter the space but remain small and specialized, with deployments in the single-digit MWh range.
- Iron-based systems represent a highly promising future direction, offering ultra-low cost and multi-day storage; however, none are yet operational, though several pilot projects are expected to come online by 2025–2026.
- Other older chemistries (NaS, Ni-based, lead-acid) play virtually no role in modern U.S. grid-scale storage.

INTRODUCTION

Grid-scale Battery Energy Storage Systems (BESS) have a relatively short history, which reflects the evolving intersection of technology, policy, and the grid's changing needs. A short history is provided to illustrate the evolving nature of battery technology.

The era prior to 2000 is referred to as a period of early concepts and small-scale deployments. During this period, lead-acid batteries were among the first battery chemistries used for energy storage, mostly for backup and off-grid power. They were not used for grid-scale applications. Japan and Germany were early adopters who began experimenting with sodium-sulfur (NaS) and nickel-cadmium grid applications during the 1980s and 1990s. It is important to note that these early BESS projects were typically under 10 MW and considered experimental or supplemental to grid management.

Between 2000 and 2010, the sector was marked by the emergence of demonstration projects and growing government interest. This interest aligns with the rise of renewables (especially wind), which sparked concern over grid stabilization. Notable early grid-scale efforts included the Golden Valley Electric Association in Alaska, which deployed a 27 MW/15-minute nickel-cadmium battery in 2003. It was the largest BESS of its kind at the time. Additionally, sodium-sulfur (NaS) batteries were deployed in the U.S., Japan, and Germany (notably by NGK Insulators). These projects were considered costly, with limited energy duration and safety concerns (e.g., fires in NaS systems).

BESS began to emerge as a market presence between 2010 and 2015, in part due to changing economics, supportive policy, and production efficiencies. In 2013, AES deployed a 32 MW lithium-ion system in West Virginia, the largest U.S. grid-connected lithium-ion battery at the time. It was also during this period that Tesla (2015) launched the Powerpack, signaling a new commercial push for lithium-ion grid storage.

Several factors contributed to the acceleration of this technology from pilot projects to market-ready systems. First and foremost was the drop in lithium-ion battery prices, partly driven by the adoption of electric vehicles (EVs). Second, federal funding through the Department of Energy's Advanced Research Projects Agency – Energy (ARPA-E) supported battery energy storage system research and development. Lastly, state incentives provided additional support, most notably California's 2010 AB 2514 mandate for 1.3 GW of energy storage procurement by 2020.

Based on the market and policy changes from 2010 to 2015, the period between 2016 and 2020 was marked by growth, innovation, and grid integration of new battery technologies. This was driven in part by falling battery costs, a drop from ~$1,200/kWh to ~$400/kWh for lithium-ion BESS. This period also saw several high-profile deployments, including Tesla's Hornsdale Power Reserve in South Australia (2017): a 100 MW / 129 MWh system (later expanded), built in response to grid instability. In the U.S., Southern California Edison installed several lithium-ion projects after the Aliso Canyon gas leak. Other battery chemistries like vanadium redox flow batteries and zinc-air began to re-emerge in pilot projects.

From 2020 to 2024, the grid-scale BESS sector experienced a commercial boom — along with increased scrutiny over safety concerns. By 2024, the U.S. had installed between 23 and 26 GW of grid-scale BESS, up from just 1 GW in 2019. Most deployments were dominated by lithium iron phosphate (LFP) batteries due to their safety and cost advantages.

Two key deployments during this period are notable:

1. **Moss Landing (California)** – designed for up to 750 MW of lithium-ion storage.
2. **Stanton BESS (California)** – designed to store 275 MWh.

The Moss Landing facility is particularly notable due to a fire event, though it was not the only fire or safety incident during this period. Safety incidents have increased with scale, prompting new regulations and updated fire codes, especially in California and New York.

Of particular note are advances in long-duration storage during this period, which gained both market and policy attention. For example, flow and iron-air batteries (e.g., Form Energy) are positioned as 10 to greater than 100-hour solutions. This work has been further supported by federal funding to accelerate the deployment of non-lithium alternatives.

Looking to the remainder of 2025 and beyond, iron-air, sodium-ion, and flow battery technologies are moving from pilot to early commercial deployment. In addition, new business models are emerging to address the changing technology and needs, specifically in energy arbitrage, frequency regulation, peak shaving, and capacity markets.

The role of BESS is expanding beyond renewable integration, with applications in transmission deferral, resilience, and microgrids. For example, global installed BESS capacity is expected to exceed 500 GW by 2030, with the U.S. playing a leading role.

With this context, the following is a review of the current battery technologies used in grid-scale BESS:

- **Lithium-Ion chemistries**
- **Flow Batteries**
- **Iron-Based systems**

The role of BESS is expanding beyond just renewables integration, with applications to transmission deferral, resilience, and microgrids. For example, global installed BESS capacity is expected to exceed 500 GW by 2030, with the U.S. playing a leading role. With this context, the following is a review of the current battery technologies used in grid-scale BESS: Lithium-Ion chemistry; “Flow” Batteries; and Iron-Based systems.

1.0 Lithium-Ion Batteries (predominantly LFP and other chemistries)

The lithium-ion class of batteries includes a variety of chemistries and are currently the dominant technology for grid-scale BESS. The current U.S. grid-scale storage relies heavily on lithium-ion, especially lithium iron phosphate (LFP), known for its thermal stability and cost-effectiveness. For instance, the Reid Gardner BESS in Nevada (commissioned December 2023) uses LFP cells and has a capacity of 220 MW/440 MWh. Similarly, large lithium-ion facilities like Moss Landing (California) and Stanton BESS (California) are operational, with capacities ranging from hundreds to thousands of megawatt-hours.

As of late 2024, U.S. grid-scale battery storage exceeded 26 GW, up from under 5 GW just a few years prior. Earlier in 2024, total operational utility-scale capacity was around 23.8 GW, with about 6 GW added in Q2 alone. Capital cost for lithium-ion storage has dropped dramatically, from around $1,200/kWh a decade ago to roughly $150–200/kWh today, with forecasts to dip below $100/kWh by mid-2020s.

2.0 Flow Batteries (e.g., Iron Flow)

A flow battery stores energy in liquid electrolytes that are held in external tanks and circulated through a cell stack where the electrochemical reactions occur. Unlike conventional batteries (like lithium-ion), the power (kW) and energy capacity (kWh) in flow batteries are decoupled:

Power output is determined by the size of the electrochemical cell stack, whereas energy storage capacity is determined by the volume of electrolyte in the tanks. They operate through the use of two electrolyte solutions (anolyte and catholyte) that are stored in separate tanks. When the battery charges or discharges, pumps move these liquids through the cell stack. Ions move through a membrane, enabling redox (reduction-oxidation) reactions that store or release electricity. The used electrolyte is returned to the tanks and can be reused for many cycles.

Common flow battery chemistries include Vanadium Redox (VRFB), most commonly developed and uses vanadium ions in different oxidations states and is highly stable; Iron Flow, which uses iron as a redox-active element that is lower cost and longer duration; Zinc-Bromine, typically used in smaller-scale applications; and experimental models that employ either all organic chemistry or hydrogen-bromine.

Flow batteries have certain advantages, such as scalable energy capacity (add more electrolyte); longer storage duration (ideal for 6 to 12 hours or more of storage); long cycle life, with 10,000 or more cycles with minimum degradation; no thermal runaway risk; and, easier reccling. The disadvantages include the need for a larger footprint (lower energy density); higher upfront capital costs; more complex to operate; and, still a niche.

They are used for grid backup and resilience, offering between 10 to 100 hours of storage during outages. It is also featured in renewable integration, to smooth out solar and wind intermittency. They are also useful for peak shaving, providing for discharge during peak hours and recharge during off-peak hours. They are also very useful for microgrids and remote sites, as they provide for long-duration autonomy and fewer maintenance needs.

Flow batteries, such as those using iron-based flow chemistry, are being deployed in small-scale long-duration projects. For example, ESS Tech has delivered systems totaling 3 MWh (12-hour duration each) to Sacramento Municipal Utility District, under a broader 200 MW/2 GWh supply contract. These installations are currently modest, on the order of single-digit MWhs per site, not yet scaling to utility-wide levels.

3.0 Iron-based Systems (Iron-Air/“Iron-Rust” Batteries)

Iron-air (often described as iron-oxide or “rust-reversible”) batteries are an emerging class of long-duration, cost-focused storage solutions. Iron-air batteries are a form of metal-air battery, which generates electricity through a reversible chemical reaction between iron and oxygen. Iron-air batteries produce electricity (discharge) when iron reacts with oxygen from the air to form iron oxide (rust). Within this reaction, electrons are released to the grid. In terms of storage, the electric current reverses the reaction, turning the rust back into metallic iron and releasing oxygen. This process is slow, by comparison to lithium systems, making it unsuitable for a rapid response, but ideal for slow, long-duration energy storage over a 24 hour to 100 hours or more.

Notable developer Form Energy is pioneering these systems, promising cost reductions of up to 10x compared to lithium-ion. Early estimates suggest this chemistry could cost as little as $20/kWh, compared to up to $200/kWh for lithium-ion systems. As of this date, no iron-air systems are yet operational at scale. However, several pilot/commercial projects are in development, including a 10 MW/1,000 MWh iron-air system planned for a retired coal facility

in Minnesota (expected online by 2025). The Cambridge, Minnesota installation slated to be first commercial site by 2025, was funded through $405 million grant to support Form Energy's manufacturing and deployment. Additional projects have been targeted in Colorado, California (2026) and elsewhere. The start-up company Form Energy has a manufacturing facility in West Virginia that is currently under development.

Table 1 - Summary of U.S. Grid-Scale BESS by Technology

Battery Technology	U.S. Operating Capacity	Typical Capital Cost (2020s)	Notes
Lithium-Ion (LFP etc.)	~24–26 GW	$150–200/kWh (forecasting < $100)	Dominant; many operational projects
Flow Batteries (Iron Flow)	A few MWh (e.g., 3 MWh delivered)	Higher; long-duration niche	Early deployments; small scale
Iron-Air (Iron-Oxide)	0 MW (pilot stage)	$20/kWh est.	Promising; not yet in operation
Other (NaS, Ni, Lead-Acid)	Minimal/obsolete	Varies; often higher or dated	Rare or being phased out

Links of Interest

Sodium Batteries

Sodium-ion Battery Market Forecast Report 2025-2033, with
Sodium-ion batteries need breakthroughs to compete | Stanford Report
Sodium-ion battery technology: So near and yet so far | S&P Global
Comprehensive review of sodium-ion battery materials: Advances and performance challenges - ScienceDirect

Iron Batteries

What are the main challenges in deploying iron-air batteries on a large scale | NenPower
Advancement of electrically rechargeable metal-air batteries for future mobility - ScienceDirect

Appendix H – Documentation regarding water wells in the surrounding area

Outlook

Fw: Midwater BESS

From Dan Pfeiffer <dpfeiffer@zanassoc.com>
Date Tue 8/12/2025 10:30 AM
To Thomas Kaiser <tkaiser@zanassoc.com>
Cc Javier Whitaker-Castaneda <jwhitaker@zanassoc.com>

3 attachments (6 MB)

Preliminary_Well_Construction_Assessment_for_Points-5-mile (2).pdf; 2025-0943_2573_well_assess (2).pdf; Preliminary_Well_Construction_Assessment_for_Points-1.5-mile (2).pdf;

FYI

Dan Pfeiffer | Business Development Director
(He/Him)
Zan Associates
612-759-1083
dpfeiffer@zanassoc.com

From: Tim Kaasa <shellrocktwp.clerk@gmail.com>
Sent: Monday, August 11, 2025 12:27 PM
To: Sullivan, Jim (COMM) <jim.sullivan@state.mn.us>; Harvieux, Jacques (He/Him/His) (PUC) <jacques.harvieux@state.mn.us>; Dan Pfeiffer <dpfeiffer@zanassoc.com>
Subject: Midwater BESS

Good afternoon,

One more email...

Dan Minear, who has land that borders the proposed site, applied for a well permit and showed me the documents that he got back on his application from the DNR. Note the statement that this area is in a "protected drinking water area". I would think that this would be taken into consideration as well for the BESS unit being proposed as well. All I have seen from the DNR on the docket as far as concerns is fence height, lighting pointing down, some vegetation replanting concerns, flight diverters, dewatering, dust erosion and staying out of the river with construction activities May - August as the Suckermouth minnow may be spawning at this time.
Dan gave me permission to send this on.

We did reach out to Erynn Jenzen at the DNR with our concerns and she said she would look into it. We heard nothing back nor has she added anything to the docket.

Please let me know if this is something that I should be bringing up or how it can be handled.

Thank you,
Tim Kaasa
Shell Rock TWP Clerk

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ECOLOGICAL AND WATER RESOURCES
117 Rogers St
Mankato, MN 56001

May 12, 2025

Daniel Minear
80259 River Road
Glenville, MN 56036

Re: DNR Preliminary Well Construction Assessment; Tracking No. 2025-0943; T101N-R20W-S8 SWSW; Freeborn County.

Dear Daniel Minear:

This preliminary assessment of your proposed well is information you can use to decide whether to proceed with your plans to drill the well and is based on information you provided. Conclusions from this assessment may change if more information becomes available or the proposed details change. This assessment is not notification to the Minnesota Department of Health (MDH), and it is not a Minnesota Department of Natural Resources (DNR) water appropriation permit.

We have reviewed your proposal for a new well based on: proposed location, depth, volume of water requested and pumping rate. Your proposal has been assessed for potential impacts to other users and the resources of concern listed on the attached sheet. If the details of your proposal change you will need to submit a new assessment application.

We have identified the following potentially significant resource impacts:

The PWCA recommends a moderate risk associated with the proposed well, as it is located within drinking water protection areas. Additionally, a native plant community and the habitat of two rare species are situated within the 1.5-mile buffer zone. A State Wildlife Management Area boundary is also located within 1 mile of the proposed well. Please complete the well capacity test as guidance indicates.

Based on these potential impacts, if you drill the well, it is moderately likely that you will need to spend time and money acquiring additional information so that DNR can determine if your well will impact other users or resources located nearby. A standard requirement of groundwater appropriation permit applications is to conduct an aquifer test to DNR specifications. In some cases the requirement for conducting an aquifer test may be waived.

Observation wells are needed to conduct an aquifer test. Any required observation wells and aquifer tests will be at your own expense. Your well driller can provide you with a cost estimate for drilling observation wells and running an aquifer test. Please note that drilling observation wells and performing an aquifer test does not guarantee that you will receive a water appropriation permit.

The attached assessment and map contains further information about our analysis.

If you proceed:
Your well driller must notify MDH prior to drilling the well. After the well is drilled, and before using the well, **you** must then apply for a DNR water appropriation permit or amend your existing water appropriation permit. The easiest way to apply for a water appropriation permit or amendment is through the Minnesota DNR Permiting and Reporting System (MPARS) at www.mndnr.gov/mpars/signin. Instructions at this site will assist you, step-by-step, through the applicaton process.

You will likely obtain a permit if you submit information with a water appropriation permit application that is sufficient for the Department to determine that the use is reasonable and meets the sustainability standard presented in Minn. Statutes 103G.287.

If you have any questions, please contact me at 507-389-8809 or erynn.jenzen@state.mn.us.

Sincerely,

Erynn Jenzen
Area Hydrologist

Enclosures

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ECOLOGICAL AND WATER RESOURCES

PRELIMINARY WELL CONSTRUCTION ASSESSMENT CHECKLIST

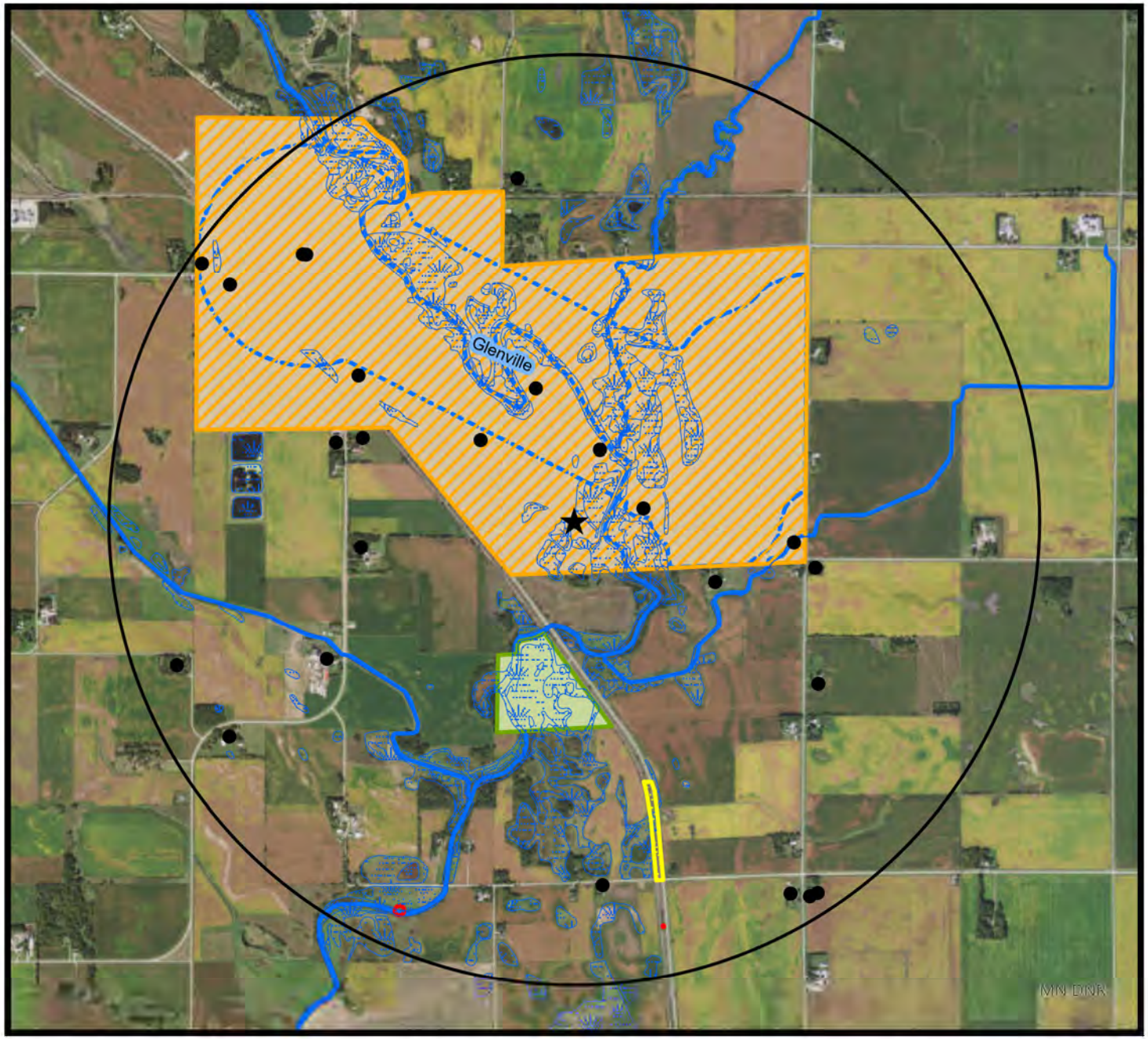
Re: DNR Preliminary Well Construction Assessment; Tracking No. 2025-0943; T101N-R20W-S8 SWSW; Freeborn County.

Assessment Factors

The factors checked are of concern in the vicinity of your proposed well location and use of water:

- [ ] Calcareous Fens
- [ ] Trout Streams
- [x] Lakes, Rivers, and Wetlands
- [ ] Well Interferences
- [x] Known Groundwater Users
- [x] Public Lands
- [x] Drinking Water Protection Areas
- [x] Contamination Sites
- [ ] Special Well and Boring Construction Areas
- [x] Rare Species and Native Plant Communities
- [ ] Groundwater Management Areas

Tracking Number: 2025-0943, 1.5 mile distance



Legend

- Proposed well(s)
- 1.5 mile radius
- Known groundwater users
- Native plant communities
- Wetlands
- Drinking water protection areas
- Public lands
- Rare species
- Rivers and streams
- Wellhead Protection Areas
- Drinking Water Supply Management Areas

N

Created by: Mustari

Date: 4/11/2025

UTM coordinates: (478656, 4823027)

Longitude(x), Latitude(y): (-93.26, 43.56)

Town:101, Range:20, Rng Dir: W, Sec:8

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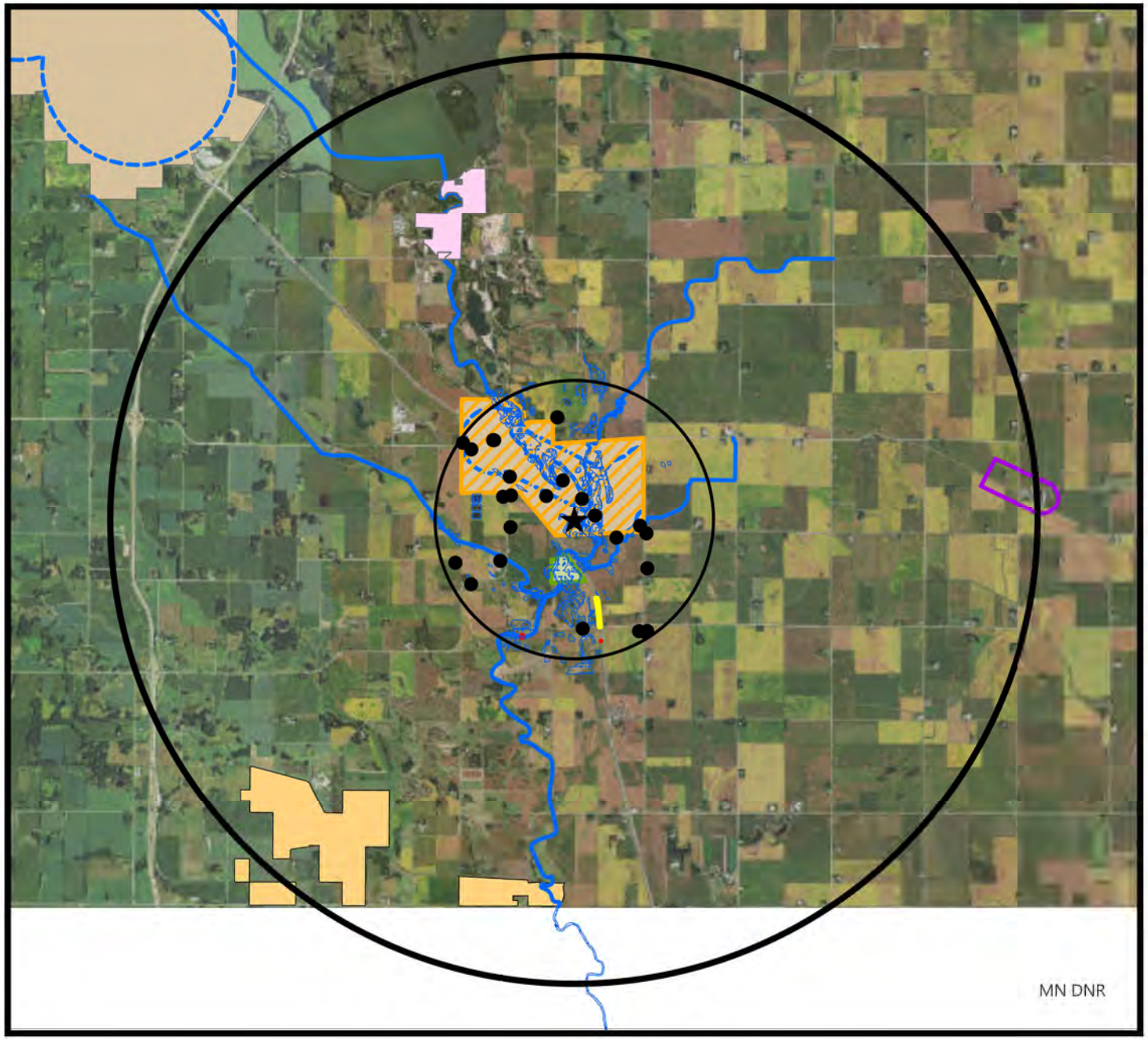
0 0.25 0.5 0.75 1 Miles

Tracking Number: 2025-0943, 1.5 and 5 mile distances



Legend

- Proposed well(s)
- 1.5 mile radius
- 5 mile radius
- Known groundwater users
- Native plant communities
- Wetlands
- Drinking water protection areas
- Public lands
- Rare species
- Rivers and streams
- Source Water Assessment Areas
- Wellhead Protection Areas
- Drinking Water Supply Management Areas
- State Wildlife Management Area
- State AMA Acquisitions - Fisheries (Sub 40)

N

Created by: Mustari

Date: 4/11/2025

UTM coordinates: (478656, 4823027)

Longitude(x), Latitude(y): (-93.26, 43.56)

Town:101, Range:20, Rng Dir: W, Sec:8

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0 0.95 1.9 2.85 3.8 Miles

Appendix I – Draft ESS Ordinance for Freeborn County

RESOLUTION AUTHORIZING AN ORDINANCE TO ENACT ENERGY STORAGE SYSTEMS REGULATIONS

WHEREAS, the County of Freeborn, State of Minnesota ("the County") is a statutory county duly organized and existing under Article XII of the Minnesota Constitution; and

WHEREAS, pursuant to Minnesota Statute (M.S.) Chapter 394 and specifically § 394.21, the County has the power and authority to conduct and implement planning activities; and

WHEREAS, the Freeborn County Planning Commission, at their June 2nd, 2025 meeting, directed the County staff to draft an Energy Storage Systems Ordinance; and

WHEREAS, the Freeborn County Planning Commission, at their July 7th, 2025, held a public hearing on the Energy Storage Systems Ordinance and made a recommendation for _____ of an Energy Storage Systems Ordinance to the Freeborn County Board of Commissioners; and

WHEREAS, the proposed ordinance is consistent with the statutory authority proscribed by M.S. Chapter 216B, 216I, and 394, or successor statutes for the regulation of Energy Storage Systems; and

WHEREAS, the ordinance is hereby to be incorporated into the Freeborn County Renewable Energy Systems Ordinance (Chapter 26); and

WHEREAS, the County hereby finds and determines that the ordinance is necessary to implement environmentally considerate development of Energy Storage Systems and to promote the public health, safety, morals and general welfare of the County, including the terms and regulations herein;

NOW, THEREFORE, BE IT ORDAINED BY THE COUNTY BOARD OF COMMISSIONERS:

Sec. 26-20. – Purpose is hereby amended to read as follows:

Sec. 26-20. – Purpose.

This Ordinance is established to set forth processes for the development of Renewable Energy from eligible energy technology as described in Minn. Statutes 216B.1691, or successor statutes, to promote the health, safety, and general welfare of the residents of Freeborn County while also protecting Freeborn County's natural resources, and shall include, but not be limited to, the following:

(1) Regulating Wind Energy Conversion.

a. Wind Energy Conversion Systems (WECS), and to regulate the installation and operation of WECS within Freeborn County not otherwise subject to sitting and oversight by the State of Minnesota pursuant to Minn. Statutes, Chapter 216F, 216I, or successor statutes.

(2) Regulating Solar Energy Systems.

a. Large, midsize, and small Solar Energy Systems, and to regulate the installation and operation of a Solar Energy System within Freeborn County pursuant to Minn. Statutes Chapters 216C.25, 216I, 500.30, or successor statutes, and Minnesota Rules Chapter 1325.1100, as amended.

(3) Regulating Energy Storage Systems.

a. Energy Storage Systems with a rated capacity of equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting, and to set forth processes for permitting Commercial energy storage systems and to regulate the installation and operation of energy storage systems within Freeborn County, outside of the incorporated limits of municipalities, pursuant to Minnesota Statutes chapters 216B.2422, 216I, or successor statutes, and Minnesota Rules chapter 1325.1100, as amended.

Sec. 26-24. – Statutory Authorization is hereby amended to read as follows:

Sec. 26-24. – Statutory Authorization.

This Ordinance is adopted pursuant to the authorization and policies contained in Minnesota Statutes 216B, 216I, and 394, or successor statutes.

Sec. 26-25. - Definitions is hereby amended to read as follows:

Sec. 26-25. - Definitions.

For the purpose of this article, the following terms shall have the meaning given to them in this section. To the extent a term used in this article is not defined in this section, the term shall have the meaning given in the county zoning ordinance.

Aggregated projects are those which are developed and operated in a coordinated fashion, but which have multiple entities separately owning one or more of the individual WECS within the larger project. Associated infrastructure such as power lines and transformers that service the facility may be owned by a separate entity but are also included as part of the aggregated project.

Air pollution means the presence in the outdoor atmosphere of any air containment or combination thereof in such quantity, of such nature and duration, and under such conditions as would be injurious to human health or welfare, to animal or plant life, or to property, or to interfere unreasonably with the enjoyment of life or property.

Aircraft Detection Lighting Systems (ADLS) means a sensor-based systems designed to detect aircraft as they approach an obstruction or group of obstructions; these systems automatically

activate the appropriate obstruction lights until they are no longer needed by the aircraft. This technology reduces the impact of nighttime lighting on nearby communities and migratory birds and extends the life expectancy of obstruction lights.

Airfoil means a part such as a blade, with a flat or curved surface, designed to provide a desired reaction force when in motion relative to the surrounding air.

Ambient Noise Level means the background sound level of an environment, typically measured under quiet conditions without significant noise contributions from temporary or transient sources.

ANSI Type 2 Performance Specifications means the minimum performance standards for sound measurement equipment as defined by the American National Standards Institute (ANSI) for environmental noise measurements.

ANSI S12.9 means a standard developed by the American National Standards Institute (ANSI) providing procedures for measuring and assessing environmental sound.

Applicant means any person, firm, corporation, or other entity submitting an application for a Permit for a Project as defined in this ordinance.

Audible Sound Limit means the maximum allowable increase in ambient noise levels, measured in decibels (dBA or dBC), attributed to a project.

Authorized Agent means a person or entity who has been legally designated, in writing, to act on behalf of the Applicant or Project owner.

Awning means a sheet of material stretched on a frame and used to keep the sun or rain off a storefront, window, doorway, patio, or deck.

Azimuth means a clockwise measurement around the horizon in degrees, beginning and ending at true north.

Board of adjustment and appeals means an officially constituted quasi-judicial body appointed by the county board whose principle duties are to hear appeals from decisions of the zoning administrator and, where appropriate, grant variances from the strict application of this article.

C-BED (Community-based energy development) project as defined in M.S.A § 216B.1612, as amended. Based on the total name plate generating capacity, C-BED projects are considered to be (1) micro-WECS, (2) non-commercial WECS or (3) commercial WECS as defined in this section.

Campground means a facility licensed by the state department of health for the purposes of camping.

Church as defined in M.S.A. § 272.02.

Commencement of Operations means the point at which a WECS, Solar Energy Systems, or Energy Storage System begins continuous commercial operation, delivering electricity to the grid under normal operating conditions. Testing, commissioning, or temporary operations do not constitute do not constitute commencement.

Commercial WECS means a WECS which is equal to or greater than 200 feet in hub height.

Comprehensive plan means the policies, statements, goals, and interrelated plans for private and public land and water use, transportation, and community facilities including

recommendations for plan execution, documented in texts, ordinances and maps which constitute the guide for the future development of the unincorporated area of the county.

Conditional use means a specific type of structure or land use listed in the official control that may be allowed but only after an in-depth review procedure and with appropriate conditions or restrictions as provided in the official zoning controls or building codes and upon a finding that: (1) certain conditions as detailed in the zoning chapter exist and (2) the structure and/or land use conform to the comprehensive land use plan if one exists and are compatible with the existing neighborhood.

County means Freeborn County, Minnesota.

County board means Freeborn County Board of Commissioners.

Decibel means a unit of measure of sound pressure.

Decommissioning Plan means the planned and orderly removal of the physical components of a renewable energy system and all accessory facilities, and restoration of the site.

dB(A), A-Weighted sound level means a measure of over-all sound pressure level in decibels, designed to reflect the response of the human ear.

dB(C), C-Weighted sound level, means a unit of sound level measurement using the C-weighted scale, which gives more weight to low-frequency sounds compared to the A-weighted scale.

Dwelling means a residential building or portion thereof intended for occupancy by a single-family, but not including hotels, motels, boarding or rooming houses or tourist homes.

Electromagnetic communications means the use of an electromagnetic wave to pass information between two points.

Eligible Energy Technology means those technologies as defined in Minnesota Statutes 216B.1691.

Emission means a release or discharge into the outdoor atmosphere of any air contaminant or combination thereof.

Energy Storage Systems means a commercially available technology that: Uses mechanical, chemical, or thermal processes to: store energy, including energy generated from renewable resources and energy that would otherwise be wasted, and deliver the stored energy for use at a later time; or stores thermal energy for direct use for heating or cooling at a later time in a manner that reduces the demand for electricity at a later time; is composed of stationary equipment; if being used for electric grid benefits, is operationally visible and capable of being controlled by the distribution or transmission entity managing it, to enable and optimize the safe and reliable operation of the electric system.

FAA means the Federal Aviation Administration.

Fall zone means the area, defined as the furthest distance from the tower base, in which a guyed tower may collapse in the event of a structural failure.

Flicker means the moving shadow cast by the rotating blades of a WECS, or any intermittent, repetitive, or rhythmic lighting effect that is a direct result of rotating WECS blades.

Flicker analysis means a study showing the duration and location of flicker potential.

Generator nameplate capacity means the maximum rated output of electrical power production of a generator under specific conditions designated by the manufacturer with a nameplate physically attached to the generator.

Hazardous waste means any refuse, sludge, or other waste material or combinations of refuse or other waste materials in solid, semisolid, liquid, or contained gaseous form which because of its quantity, concentration, or chemical, physical, or infectious characteristics may (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Categories of hazardous waste materials include, but are not limited to: explosives, flammables, oxidizers, poisons, irritants, and corrosives. Hazardous waste does not include source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended.

Health care facilities mean facilities principally engaged in providing services for health maintenance and the treatment of mental or physical conditions including but not limited to hospitals, clinics, and nursing homes.

Hub height means the distance from the ground to the center axis of the turbine rotor.

Impervious surface means a constructed hard surface that either prevents or retards the entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development. Examples include rooftops, driveways, parking lots, and concrete, asphalt, or gravel roads. Bridges over surface waters are considered impervious surfaces. Recreational trails that are distinctly set apart from a roadway (i.e. not parallel) and intended for non-motorized recreational uses, are not considered impervious surfaces. Sidewalks that are parallel to a roadway (or generally following alongside a roadway) must still be included as impervious surfaces per Minnesota Rule 7090.

Kilowatt means a unit of power equal to 1000 watts.

L90 Descriptor means a statistical measure of noise that represents the sound level exceeded for 90% of the measurement period, commonly used to characterize background noise levels.

Maximum design tilt (solar energy system) means the maximum tilt, or angle, is vertical, or 90 degrees for a solar energy system designed to track daily or seasonal sun position or capable of manual adjustment on a fixed rack.

Megawatt means a unit of power equal to one million watts.

Meteorological tower for the purposes of this article, are those towers which are erected primarily to measure wind speed and directions plus other data relevant to siting WECS. Meteorological towers do not include towers and equipment used by airports, the state department of transportation, or other similar applications to monitor weather conditions.

Micro-WECS means a WECS which is less than 100 feet in hub height.

Minimum design tilt (solar energy system) means the minimum tilt, or angle, is horizontal, or zero degrees for a solar energy system designed to track daily or seasonal sun position or capable of manual adjustment on a fixed rack.

Native Prairie Plan. The plan shall address steps to be taken to identify native prairie within the project area, measures to avoid impacts to native prairie, including foundations, access roads, underground cable and transformers, shall not be placed in native prairie unless addressed in the prairie protection and management plan.

Nameplate capacity means the total maximum rated output of a renewable energy system.

NFPA means the "National Fire Protection Association".

Noise profile means a study certifying the Renewable Energy System is in compliance with Minnesota Chapter 7030, as amended, of the Minnesota Pollution Control Agency noise standards.

Non-commercial WECS means a WECS equal to or greater than 100 feet in total height, but equal to or less than 200 feet in hub height.

Non-Participating means any individual, entity, or property that is not subject to a lease, easement, or other contractual agreement permitting the construction, installation, or operation of a WECS, solar energy system(s), or energy storage system(s).

Non-prevailing wind means the non-dominant wind direction in the county.

Participating means any individual, entity, or property that is not subject to a lease, easement, or other contractual agreement permitting the construction, installation, or operation of a WECS, solar energy system(s), or energy storage system(s).

Permit, when referred to in this ordinance, "Permit" shall exclusively mean a Freeborn County Permit, unless otherwise specified. This applies to all references to land use permits, conditional use permits, interim use permits, and any other type of permit mentioned herein.

Pervious surfaces allow percolation or infiltration of stormwater through the surface into the soil below where the water is naturally filtered and pollutants are removed. Examples of pervious surface include: permeable pavers, pervious concrete, porous asphalt, and naturally porous materials that allow air and water to move through it.

Pollutant means any sewage, industrial waste, or other wastes, as defined in M.S.A. § 115, discharged into a disposal system or to waters of the state.

Pollution of water, water pollution, or *pollute the water* means (a) the discharge of any pollutant into any waters of the state or the contamination of any waters of the state so as to create a nuisance or render such waters unclean, or noxious, or impure so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, agricultural, commercial, industrial, recreational or other legitimate uses, or to livestock, animals, birds, fish or other aquatic life; or (b) the alteration made or induced by human activity of the chemical, physical, physical, biologic, or radiological integrity of waters of the state.

Power line means an overhead or underground conductor and associated facilities used for the transmission or distribution of electricity.

Power purchase agreement means a legally enforceable agreement between two or more persons where one or more of the signatories agrees to provide electrical power and one or more of the signatories agrees to purchase the power.

Preliminary acoustic study means a study certifying the WECS will be in compliance with Minnesota Chapter 7030, as amended, of the Minnesota Pollution Control Agency.

Prevailing wind means the predominant wind direction in the county.

Project means a Renewable Energy Systems Project.

Project boundary/property line means the boundary line of the area over which the entity applying for a permit has legal control for the purposes of installation of a Renewable Energy System. This control may be attained through fee title ownership, easement, or other appropriate contractual relationship between the project developer and landowner.

Project owner means an individual or entity with legal ownership of a Renewable Energy Systems project.

Public conservation lands means land owned in fee title by state or federal agencies and managed specifically for conservation purposes, including but not limited to state wildlife management areas, state parks, state scientific and natural areas, federal wildlife refuges and waterfowl production areas. For the purposes of this section public conservation lands will also include lands owned in fee title by non-profit conservation organizations. Public conservation lands do not include private lands upon which conservation easements have been sold to public agencies or non-profit conservation organizations.

Qualified independent acoustical consultant means a person with full membership in the Institute of Noise Control Engineers (INCE), or other demonstrated acoustical engineering certification. The independent qualified acoustical consultant can have no financial or other connection to a WECS developer or related company.

Receptor means structures intended for human habitation, whether inhabited or not, including but not limited to churches, schools, hospitals, public parks, state and federal wildlife areas, the manicured areas of recreational establishments designed for public use, including but not limited to golf courses, and camp grounds.

Renewable energy means energy from sources that are not easily depleted such as moving water (hydro, tidal and wave power), biomass, geothermal energy, solar energy, wind energy, and energy from solid waste treatment plants.

Renewable Energy System means the collection or storage of energy from sources that are not easily depleted including but not limited to, moving water (hydro, tidal and wave power), biomass, geothermal energy, solar energy, wind energy, and energy from solid waste treatment plants.

Repowering means rebuilding a renewable energy system on a previously impacted site, preserving the existing compatible land uses.

Repowering, Full. A full decommissioning and repowering of a renewable energy system on a previously impacted site.

Repowering, Par al. A par al rebuilding of a renewable energy system where existing components is retrofitted or replaced to improve efficiency and extend the life of the system (e.g. replacing, refurbishing or retrofitting turbines, blades, gearboxes, generators, switchgears, panels, etc.).

Roof pitch means the final exterior slope of a building roof calculated by the rise over the run, typically but not exclusively expressed in twelfths, such as 3/12 , 9/12 , or 12/12 .

Rotor means a system of airfoils connected to a hub that rotates around an axis.

Rotor blades see "Airfoil."

Rotor diameter (RD) means the diameter of the circle described by the moving rotor blades.

School as defined in M.S.A. § 120A.05, as amended, and private schools excluding home school sites.

Sensitive habitat means an area historically or currently occupied by a species or community of species in which are found those physical or biological features essential to the establishment or continued existence of the species and which may require special management, conservation or protection considerations.

Solar collector means a device, structure, or part of a device or structure for which the primary purpose is to transform solar radiant energy into thermal, mechanical, chemical, or electrical energy.

Solar daylighting means a device specifically designed to capture and redirect the visible portion of the solar spectrum, while controlling the infrared portion, for use in illuminating interior building spaces in lieu of artificial lighting.

Solar energy means radiant energy received from the sun that can be collected in the form of heat or light by a solar collector.

Solar energy device means a system or series of mechanisms designed primarily to provide heating, cooling, electrical power, mechanical power, solar daylighting or to provide any combination of the foregoing by means of collecting and transferring solar generated energy into such uses either by active or passive means. Said systems may also have the capacity to store energy for future utilization. Passive solar energy systems shall clearly be designed as a solar energy device, such as a trombe wall, and not merely part of a normal structure, such as a window.

Solar energy system means a set of devices that the primary purpose is to collect solar energy and convert and store it for useful purposes including heating and cooling buildings or other energy-using processes, or to produce generated power by means of any combination of collecting, transferring, or converting solar energy. This definition also includes structural design features, the purpose of which is to provide daylight for interior lighting.

Solar energy system, accessory use means a solar energy system that is secondary to the primary use of the parcel on which it is located and which is directly connected to or designed to serve the energy needs of the primary use. Excess power may be sold to a power company.

Solar energy system, active means a solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical, or chemical means.

Solar energy system, building integrated means an active solar energy system that is an integral part of a principal or accessory building, rather than a separate mechanical device, replacing or substituting for an architectural or structural component of the building. Such systems include, but are not limited to, solar energy systems that function as roofing materials, windows, skylights, and awnings.

Solar energy system, grid-intertie means a photovoltaic solar energy system that is connected to an electric circuit served by an electric utility company.

Solar energy system, ground-mounted means a solar collector, or collectors, located on the surface of the ground. The collector or collectors may or may not be physically affixed, or attached to the ground. Ground-mounted systems include pole-mounted systems.

Solar energy system, large means a solar energy system with a nameplate capacity of 40 kilowatts or more.

Solar energy system, mid-size means a solar energy system with a nameplate capacity of greater than ten kilowatts but less than 40 kilowatts.

Solar energy system, small means a solar energy system with a nameplate capacity ten kilowatts or less.

Solar energy system, off-grid means a photovoltaic solar energy system in which the circuits energized by the solar energy system are not electrically connected in any way to electric circuits that are served by an electric utility company.

Solar energy system, passive means a solar energy system that captures solar light or heat without transforming it to another form of energy or transferring the heat via a heat exchanger.

Solar energy system, photovoltaic means an active solar energy system that converts solar energy directly into electricity.

Solar energy system, primary use means a solar energy system which is the primary land use for the parcel on which it is located and which generates power for sale to a power company, or other off-premise consumer.

Solar energy system, reflecting means a solar energy system that employs one or more devices designed to reflect solar radiation onto a solar collector. This definition includes systems of mirrors that track and focus sunlight onto collectors located at a focal point. The collectors may be thermal or photovoltaic.

Solar energy system, roof-mounted means a solar collector, or collectors, located on the roof of a building or structure. The collector or collectors may or may not be physically affixed, or attached to the roof.

Solar heat exchanger means a component of a solar energy device that is used to transfer heat from one substance to another, either liquid or gas.

Solar hot air system also referred to as solar air heat; or a solar furnace. An active solar energy system that includes a solar collector to provide direct supplemental space heating by heating and re-circulating conditioned building air. The most efficient performance typically means vertically mounted on a south-facing wall.

Solar hot water system also referred to as a solar thermal. A system that includes a solar collector and heat exchanger that heats or preheats water for building heating systems or other hot water needs, including domestic hot water and hot water for commercial or industrial purposes.

Solar mounting devices means devices that allow the mounting of a solar collector onto a roof surface, wall, or the ground.

Substation means any electrical facility containing power conversion equipment designed for interconnection with power lines.

Transmission line see "Power line."

Total height means the highest point, above ground level, reached by a rotor tip or any other part of the WECS.

Total name plate capacity means the total of the maximum rated output of the electrical power production equipment for a WECS project.

Tower means vertical structures that support the electrical generator, rotor blades, or meteorological equipment.

Tower hub height means the total height of the tower exclusive of the rotor blades.

Wake loss means the loss of wind resource downwind of an operating wind turbine.

Wake loss study means a study of potential impacts to the wind resource downwind of operating wind turbines.

Water consumption means water withdrawn from a supply that is lost for immediate further use in the area.

Water storage means the intentional retention or detention of water on or in the landscape for a desired period.

Waters of the State means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or portions of the state.

Wind energy conversion system (WECS) means a device such as a wind charger, windmill, or wind turbine and associated facilities that converts wind energy to electric energy, including, but not limited to: power lines, transformers, substations, and meteorological towers. The energy may be used on-site or distributed into the electrical grid.

Wind turbine means any equipment that converts the kinetic energy of blowing wind into electrical energy through the use of airfoils or similar devices to capture the wind.

Zoning ordinance means the County Code of Ordinances, regulating the use of land and water in the county; adopted December 1, 2015, as amended.

Sec. 26-31. - General procedures is hereby amended as follows:

Sec. 26-31. – General procedures.

(a) *Review.* Zoning permits, conditional use permits and variances shall be applied for and reviewed under the procedures established in the County Code of Ordinances and M.S.A ch. 394, except where noted below.

(b) *Permit required.* WECS, solar energy systems, and energy storage systems may be allowable as either permitted or conditional uses:

(1) A zoning permit or building permit shall be required for all micro-WECS and small solar energy systems.

(2) A conditional use permit and building permit shall be required for non-commercial WECS, commercial WECS, meteorological towers, energy storage systems, mid and large solar

energy systems, any wall or roof mount, and reflecting solar energy systems as per sections 26-41 and 26-71.

(3) Building permit as per the state building code shall be required as applicable.

(4) This article as it applies to WECS with a combined name plate capacity of up to 25 megawatts. As per M.S.A § 216I.10, the state public utility commission processes zoning applications for WECS of 25 megawatts or greater.

(5) This article as it applies to solar energy systems with a combined name plate capacity of up to 50 megawatts. As per M.S.A. § 216I.10, the state public utility commission processes zoning applications for solar energy systems of 50 megawatts or greater.

(6) This article as it applies to energy storage systems with a combined name plate capacity of up to 10 megawatts. As per M.S.A. § 216I.10, the state public utility commission processes zoning applications for energy storage systems of 10 megawatts or greater.

(c) *Renewable Energy Project Compliance.* All Renewable Energy Projects shall be in compliance with all applicable state and federal regulatory standards including, but not limited to:

(1) International Building Code as adopted by the State of Minnesota.

(2) The National Electrical Code as adopted by the State of Minnesota.

(3) FAA requirements

(4) MPCA/EPA regulations (hazardous waste, construction, storm water, etc.)

Sec. 26-34. Applications for Energy Storage Systems (equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting as per state statute) is hereby amended as follows:

Sec. 26-34. – Applications for Energy Storage Systems (equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting as per state statute).

(1) *Preliminary Consultation and Review*

a. *Submission of Preliminary Plan*. Prior to filing an application for a permit with the Zoning Administrator, the Applicant must submit a preliminary site plan to the Freeborn County Board of Commissioners at least twenty (20) days before a scheduled regular meeting of the Board of Commissioners. This preliminary consultation and review must be included on the agenda for that meeting. This plan must include a list of all residents and landowners and their addresses within a one-mile perimeter of the Project site.

b. *Purpose of Consultation*. This preliminary step is informal and, at a minimum, aims to:
   1. Review the fundamental concepts of the proposal.
   2. Allow comment by surrounding property owners and the general public regarding potential impacts, including but not limited to noise, environmental hazards and visual considerations.

3. Assess the proposal against applicable ordinances or regulations, including township specific rules.

4. Assess the readiness of the applicant and local emergency service providers to respond to emergency situations that could occur during construction, operation or decommissioning of an energy storage system;

5. Discuss how to avoid or mitigate potential negative impacts of the energy storage system on existing or future land uses, agricultural practices, human health and safety, wildlife, and infrastructure; and

6. Discuss any other relevant issues as the project is anticipated so as to help ensure a more complete and thorough formal application when submitted.

c. *Non-Binding*. The preliminary consultation and review do not obligate the Applicant, the Planning Commission, or the County Board of Commissioners to any specific future actions.

d. *Public Notification*. Notices will be sent by the Applicant to landowners within a one-mile perimeter of the Project site at least fourteen (14) days prior to the meeting of the Board of Commissioners, specifying the date, time, location, and specific grounds for the hearing. A notice will be published once in the area newspaper at least ten (10) days before the meeting. The Preliminary Consultation must be listed on the meeting agenda.

e. *Separation from Formal Process*. This preliminary consultation is distinct from formal CUP/IUP application proceedings. The Statutory time limits of Minnesota Statutes 15.99 for action on the application do not commence until acceptance of a formal application by the Zoning Administrator. This stage serves to identify potential issues early, ensuring a complete application process.

f. *Documentation*. While the meeting minutes will record discussions from the preliminary consultation, any comments or suggestions made are not binding on the conditions of final approval.

(1) *Permit applications for energy storage systems.* Land use permits, conditional use permits and variances shall be applied for and reviewed under the procedures established in the Freeborn County Zoning Ordinance and Minnesota Statutes chapter 394, except as noted below. An application to the county for a permit under this section is not complete unless it contains the following:

a. A site plan of existing conditions showing the following:

1. Existing property lines and property lines extending thirteen hundred twenty (1320) feet from the exterior boundaries, including the names of the adjacent property owners and current use of those properties.

2. Existing public and private roads, showing widths of the roads and associated easements.

3. Location and size of any abandoned or active wells, aquifers, sewage treatment systems and dumps.
4. Existing buildings and any impervious surface.
5. Topography at two-foot intervals and source of contour interval. A contour map of the surrounding properties may also be required.
6. Existing vegetation (list type and percent of coverage, i.e., grassland, farmed field, wooded areas, etc.)
7. Waterways, watercourses, lakes and public water wetlands.
8. Delineated wetland boundaries within 100 feet of the energy storage system.
9. The 100-year flood elevation and regulatory flood protection elevation, if applicable.
10. Floodway, flood fringe, and/or general floodplain district boundary, if applicable.
11. Surface water drainage patterns.
12. Upon the request of the zoning administrator, planning commission, or county board, the applicant shall submit any other information or exhibits as necessary to make findings, recommendations and disposition on the conditional use permit application.

b. Site plan of proposed conditions.
   1. Location of energy storage system.
   2. Location of access roads.
   3. Planned location of underground or overhead electric lines connecting the energy storage system to solar energy system, wind energy system, building, substation, or another electric load.
   4. New electrical equipment other than at the existing building or substation that is the connection point for the energy storage system.
   5. Proposed stormwater management measures and erosion and sediment control measures.
   6. The plan shall address road maintenance during and after completion of construction on the site.

c. Description of the method of connecting the energy storage system to a building or substation.

d. Copy of the interconnection agreement with local electric utility or a written explanation outlining why an interconnection agreement is not necessary.

e. Description of the economic impacts that the energy storage system will have on the County and affected township(s).

f. Detailed Groundwater Protection Plan to include annual soil testing to verify that hazardous materials from the energy storage system does not leach into the soils. Initial soil tests are to test the top 1 foot of soil, at minimum, and may be required at greater depth depending on results. Plan will include mitigation measures to include additional testing if elevated levels of hazardous materials are found. Additional testing may also include

the EPA Toxicity Characteristic Leaching Procedure (TCLP). The project owner will be responsible for the cost of this testing. Permit will authorize Freeborn County and/or a delegated agent to perform additional soil testing as an independent assurance of developers testing. All test results will be posted on the project website as well as the County website and shared with any regulatory agency as needed. Number of test sites will be determined by size of project and proximity to wellheads.

g. Detailed Decommissioning Plan according to Section 26-84 of this Ordinance.

h. Agricultural Impact Mitigation Plan according to Section 26-82 of this Ordinance.

i. Emergency Response Plan according to Sec. 26-87 of this Ordinance.

j. Baseline Noise Study according to Sec. 26-85 of this Ordinance.

Division 6. – Energy Storage Systems Standards is hereby amended as follows:

Division 6. – Energy Storage Systems Standards.

Sec. 26-81. – Permitted and conditional uses.

Energy Storage Systems will be permitted, conditionally permitted, or not permitted based on the land use district as established in the tables below (P = Permitted, C = Conditionally, BASE = Refer to base zone, Permitted, NP = Not Permitted).

"A" Agricultural	C
"PD" Planned Development	C
"RH" Country Homes	NP
"R-1" Rural Residence	NP
"R-2" Suburban Residence	NP
"U" Urban Expansion	BASE
"B-1" General Business	NP
"B-2" Highway Business	NP
"I-1" Light Industry	C
"I-2" Industry	C
Floodplain	NP
Shoreland	C

Sec. 26-82. – Energy Storage Systems General Standards.

All Energy Storage Systems equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting shall adhere to the setbacks established in the following table and subject to the General Regulations as well the specifications in each zoning district in the Freeborn County Zoning Ordinance.

(1) Standards for Energy Storage Systems **(**equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting)

a. Energy Storage Systems. This Ordinance is established to regulate the installation and operation of Energy Storage Systems with a rated capacity of equal to or greater than 40 kilowatts up to meeting the Threshold for PUC Permitting. This ordinance is established to set forth processes for permitting Commercial energy storage system and to regulate the installation and opera on of energy storage systems within Freeborn County, outside of the incorporated limits of municipalities, pursuant to Minnesota Statutes chapters 216B.2422, and Minnesota Rules chapter 1325.1100, as amended.

b. Structure Setbacks for Energy Storage Systems. All components of an Energy Storage System, including converters, substations, transformers and inverters, but not including roads, collector lines and fencing, must meet the greater of structure setbacks for the zoning district and the setbacks listed below:

1. Energy Storage Systems must be a minimum of thirteen hundred twenty (1320) feet from a dwelling, other than project owners or an incorporated municipality unless a setback waiver is obtained.
2. Energy Storage Systems must be a minimum of one hundred fifty (150) feet from the right of way of all roads.
3. Energy Storage Systems Fencing must be located a minimum of one hundred (100) feet from the right of way of all roads.
4. Energy Storage Systems must be located a minimum of one hundred (100) feet from all 103E Public Drainage Systems and wetlands.
5. Energy Storage Systems must be located a minimum of thirty (30) feet from side and rear property lines within the project limits.
6. Setback Waiver - A waiver form may be obtained from the owner of a dwelling, other than project owner(s) and must be recorded with the County Recorder's office as part of the Conditional Use Permit for proposed Energy Storage Systems. No Energy Storage Systems will be allowed within two hundred (200) feet of a dwelling.

c. *Minimum/Maximum Height.* The stacking of battery storage units is expressly prohibited, and all battery storage units along with their support structures shall not exceed a total height of 12 feet at any point, unless specifically authorized by the County.

d. Fencing and Security.

1. A security fence shall encompass all components of an Energy Storage System featuring at least one gate with a locking mechanism on the primary access side. The fence must display appropriate warning signs and 24-hour emergency contact information at points of entry to the fenced area, which shall be clearly visible.

2. When an Energy Storage System is integrated with a Solar Energy System, they shall be considered a single facility for the purpose of fencing. A single security fence shall be installed surrounding all of the combined Energy Storage System and Solar Energy System facilities, without the need for internal division between the battery. All other fencing and security requirements apply as outlined.

3. All fencing, gates, and signage must be maintained in good condition for the duration of the Project's operation.

4. Barbed or razor wire fencing is generally prohibited unless specifically approved by the County or required under local, state, or federal law.

5. The Applicant may submit, or the County may require, a fencing plan that minimizes impacts to wildlife in accordance with published or other guidance from the Minnesota Department of Natural Resources or other appropriate professional.

e. *Storm Water Management and Erosion and Sediment Control.* Storm water Management and Erosion and Sediment Control shall meet the requirements of the MPCA Construction Storm water Permit requirements. The applicant shall obtain a letter of recommendation from the local Soil and Water Conservation District.

f. *Color and Finish.* All Structures that are part of an Energy Storage System shall be white, grey or another nonobtrusive color. Finishes shall be matte or non-reflective.

g. *Vegetative landscape buffer and screening.* A vegetative landscape buffer must be implemented and maintained around the entire exterior perimeter of the security fence of an Energy Storage System. The vegetative buffer shall be set back consistent with the requirements for a Fire Safety Buffer required by this Ordinance. This measure is aimed at enhancing the visual appeal and environmental integration of the Project. The following standards must be adhered to:

1. Requirements.

i. The landscape buffer shall consist of a minimum of three distinct rows of plantings.

ii. The buffer must provide visual screening and glare minimization of the Energy Storage System throughout all seasons to the greatest extent reasonably possible.

iii. The vegetative landscape buffer must have a minimum height equal to that of the top of the highest component within the Energy Storage System (excepting incidental equipment used for communications equipment or other accessory uses) within two (2) years of the original planting.

iv. A continuous, maintained grass cover must be established and preserved throughout the buffer, including beneath and in-between the trees and shrubs, to enhance soil stability, water filtration, and overall aesthetics.

2. Species Selection and Design.

   i. The species, spacing and design of the vegetative buffer will be determined by the Freeborn County Soil and Water Conservation District (SWCD) staff, with joint approval authority.

   ii. Tree and shrub selections will be based on the soils Windbreak Suitability Group from the SWCD Field Office Technical Guide.

   iii. Species should also be referenced from Table 7 of the Native Trees and Shrubs Beneficial to Upland Wildlife chart.

3. *Maintenance Responsibility*. The property owner and Energy Storage Systems operator share the obligation to maintain the vegetative buffer, ensuring that all vegetation within it are kept alive and healthy. They must also actively manage the buffer to keep it free from noxious weeds and invasive plants.

4. *Enforcement and Penalties.* Failure to maintain the vegetative screening as specified will result in enforcement actions by the County. The costs incurred for rectifying any maintenance deficiencies will be assessed against the property.

h. *Ground Cover.* Ground cover shall consist of perennial vegetation and incorporate pollinator friendly species.

i. *Other Signage.* All signage on site shall comply with Chapter 30 of the Freeborn County Code of Ordinances.

j. *Power Lines Associated with The Energy Storage System*. All power lines associated with the Energy Storage System subject to Freeborn County Authority equal to or less than 34.5 kV in capacity shall be buried and located within the right-of-way, subject to prior approval of the road authority. Power lines installed as part of a Renewable Energy System shall not be considered an essential service. If not buried, the applicant/owner must apply for a variance and shall follow Article XI of the Zoning Ordinance for variance procedures.

k. *Waste Disposal*. Solid and hazardous wastes, including but not limited to crates, packaging materials, damaged or worn parts, as well as used oils and lubricants, shall be removed from the site promptly and disposed of in accordance with all applicable local, state and federal regulations.

l. *Orderly Development*. Upon issuance of a conditional use permit, all Energy Storage Systems, as defined by Minnesota Statute 216F, 216C.25, 500.30, or successor statutes, and/or Minnesota Rule 1325.1100, as amended, if applicable shall notify the Minnesota Public Utilities Commission (PUC) Energy Facilities Permitting Program Staff of the project location and details on the survey form specified by the PUC.

m. *Electrical Codes and Standards.* All Energy Storage Systems and accessory equipment and facilities shall comply with the National and Minnesota Electrical Codes and other applicable standards, as amended.

n. Fire Suppression System for Energy Storage Systems: All Energy Storage Systems must be equipped with an automatic fire suppression system. If a clean agent fire suppression system is commercially available and suitable for the specific battery chemistry, it shall be installed. The system must:

1. Undergo maintenance and testing two (2) times annually to ensure ongoing reliability and readiness.
2. Comply with all applicable fire safety standards, including NFPA 855 or its equivalent.
3. Be designed to effectively manage fire risks associated with battery storage, particularly thermal runaway.
4. Incorporate early detection methods (gas, smoke, heat, flame detectors) for automatic activation.
5. Include provisions for containment to prevent fire spread beyond the battery enclosures.

o. *Fire Safety Buffer*. For Energy Storage Systems, a non-combustible buffer zone of at least 20 feet must be maintained between battery storage units and any combustible materials like trees, shrubs, tall grasses or combustible structures to prevent fire spread.

p. *PFAS Chemicals.* The use of PFAS chemicals in any components of an Energy Storage System is strictly prohibited. Developers must provide documentation and certification that all components, are free from PFAS chemicals before construction permits are issued. Certification of PFAS-free components must also be submitted for any replacement panels or parts.

q. *Local Emergency Services Notification.* The Applicant shall provide a copy of the project summary and site plan to local emergency services, including paid or volunteer Fire Department(s) that serve the project area. The Applicant shall coordinate with local emergency services to develop and implement an emergency response plan for the project. A copy of the plan shall be submitted to the Zoning Administrator.

r. *Abandonment and Decommissioning.* An Energy Storage System shall be considered a discontinued use after one (1) year without energy production or storage, unless a plan is developed and submitted to the Zoning Administrator outlining the steps and schedule for returning the Energy Storage System to service.

s. *Storage Restrictions.* No unused, out-of-service, defunct, inverters, batteries, or related equipment shall be stored on the Project site or anywhere else within Freeborn County, except at designated recycling or disposal facilities. Such items must be removed from the

site and county within thirty (30) days of being deemed unusable, unnecessary, or no longer required for immediate construction, maintenance, or repairs.

t. *Other Standards and Codes.* All energy storage systems shall be in compliance with any applicable local, state and federal regulatory standards, including the State of Minnesota International Building Code, as amended; and the National Electric Code, as amended.

Sec. 26-82. - **Avoidance and Mitigation of Damages to Public Infrastructure**

(1) *Roads*. Applicants shall:

a. Identify all public roads to be used for the purpose of transporting Energy Storage System components, such as but not limited to, substation parts, materials, and/or equipment for construction, operation or maintenance of the Energy Storage System and obtain applicable weight and size permits from the impacted road authority(ies) prior to construction.

b. Contact the road authority for road closures, road signage removals, road signage re-locating, road signage restoring, moving permits, culverts, access/driveway permits, tile outlet permits, widening road intersections, standard utility permits and any other road activities that may require permits.

c. Contact the Freeborn County Dispatch prior to any road closures for the re-routing of emergency vehicles during the closure.

d. Contact the road authority to conduct an inspection of the road conditions of the haul routes on or prior to pre-construction meeting and after construction.

e. Provide a Performance Bond to be held by the County until the Township and/or County Road authority(ies) have provided the Freeborn County Auditor with a written release that all haul routes within their jurisdiction in Freeborn County have been returned to pre-construction on condition.

(2) Drainage System.

a. The Applicant is responsible for locating all tile as part of a 103E public drainage system within the project area.

b. The Applicant shall be responsible for immediate repair of damage to public and private drainage systems stemming from construction, operation, maintenance, or decommissioning.

(3) Pre-Construction Meeting.

a. Pre-Construction Meeting notification requirements.

1. Applicant will conduct a Pre-Construction meeting prior to construction commencement with written notice sent to the following individuals a minimum of one week prior to said meeting:

i. Township Chairman

ii. Freeborn County Highway Engineer and Ditch Inspector

iii. Freeborn County Sheriff

iv. Freeborn County Zoning/Environmental Administrator

v. Area Hydrologist, Minnesota Department of Natural Resources

vi. Minnesota Pollution Control Agency

vii. United States Farm Service Agency

viii. Freeborn County Soil & Water Conservation District

ix. United States Fish & Wildlife Service

x. Minnesota State Historical Society

xi. Two Planning Commission Members: Chair and County Board Representative

xii. MnDOT

Sec. 26-83 . – Criteria of Approval.

A Permit for an Energy Storage System may be approved only upon finding that all of the criteria of the Freeborn County Zoning Ordinance relating to conditional use permits have been met, in addition to the following additional criteria:

(1) The Applicant owns the property(ies) or has secured a proper lease agreement(s) on the property, unless the County Board determines that unique conditions or circumstances warrant special arrangement due to unforeseen circumstances.

(2) The proposed Project is allowed as a principle use in the respective zoning district and conforms to this chapter.

(3) The proposed Project is keeping with the spirit and intent of this section.

(4) The construction of the Project shall not impede the County's ability to implement and carry out its comprehensive plan.

(5) The proposed Project is compatible with the present character of the surrounding area.

(6) The Applicant has shown that they have pursued and exhausted all efforts to place the proposed Project on non-prime or less productive agricultural land before considering prime agricultural land.

(7) The Applicant has shown that they have preserved the ability of non-participating landowners and agricultural producers to continue their current land uses, in a reasonable manner or have made those landowners a participating landowner through the acquisition of appropriate easements.

(8) The proposed project shall have a set date(s) in which the constructed Project shall be reviewed for compliance with the terms of approval.

(9) The proposed Project shall be subject to the criteria of approval applicable to permits in the Zoning Ordinance.

(10) The proposed energy storage system and associated equipment shall not exceed County noise limits as measured at non-participating property lines, consistent with state and federal regulations.

(11) The proposed energy storage system(s) shall not result in adverse impacts to aviation safety, weather radar systems, or emergency communication networks.

(12) The proposed energy storage system(s) shall avoid, minimize, or mitigate detrimental effects on wildlife habitats or migratory corridors.

Sec. 26-84. - Abandonment and Decommissioning Plan.

(1) The Decommissioning Plan shall contain:

a. A Description of how the project will be disconnected from the grid.

b. A detailed description of how the physical components will be removed, transported off-site, and disposed of. The description shall include the stepwise process of removal.

c. If any of the land is leased, a description of decommissioning, abandonment, and removal conditions included in landowner leases (e.g. how is it decided whether roads remain).

d. A statement of the restoration goal and a detailed description of how restoration will be accomplished.

e. All components and accessory facilities shall be completely removed below grade.

f. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

g. Stabilization or re-vegetation of the site as necessary to minimize erosion.

h. A detailed estimate of decommissioning costs. This estimate should detail cost assumptions (e.g. number of days of crane rental, transportation costs, disposal fees, scrap value, etc.) and a timeline for updating the costs. The es mate shall be prepared by a Professional Engineer, a contractor capable of decommissioning or a person with suitable expertise or experience with decommissioning. The cost estimate for removal shall include an adjustment for inflation over the expected life of the project.

i. A plan for decommissioning security, including the type of instruments being considered, a timeline for funding of the assurance (e.g. twenty-five percent (25%) of estimated cost in year ten (10), twenty-five percent (25%) in year fifteen (15)), a description of how the amount of money available will be reconciled with the changing cost estimates, and the proposed beneficiary of the security. The plan must be reviewed and updated every five (5) years with a copy of the updated plan submitted to the Freeborn County Planning Commission. The Board may require the posting of a bond, letter of credit, or the establishment of an escrow account to ensure proper decommissioning.

j. The plan shall also address road maintenance during and after completion of the decommissioning in compliance with this Ordinance.

Sec. 26-85. – Noise Limits

All Energy Storage Systems must comply with the following noise limits:

(1) *Audible Sound Limits.* Project noise shall not exceed the lower of:

a. 3 dBA or 3 dBC above pre-construction background levels, measured at the nearest non-participating dwelling or non-participating occupied structure.

b. 45 dBA or 45 dBC at any point within 50 feet of a non-participating dwelling or non-participating occupied structure.

(2) Baseline Noise Study:

a. A pre-construction noise study must establish ambient noise levels at all nonparticipating dwellings and non-participating occupied structures within one half mile of the project boundary.

b. Background noise shall be measured using the L90 dB descriptor (A and C weighting) during representative quiet periods between 10:00 PM and 6:00 AM.

c. Measurements shall be conducted over a minimum of two quiet periods between 10:00 PM and 6:00 AM, with at least two 10-minute L90 measurements recorded per hour.

(3) Measurement Requirements:

a. Noise measurements must be conducted using ANSI Type 2 or better instruments.

b. Procedures must follow ANSI S12.9 or an equivalent environmental noise assessment standard.

(4) *Waivers for Higher Noise Limits*. A non-participating property owner may waive the noise limits set forth in this ordinance for non-participating dwellings and non-participating occupied structures by executing a written, notarized, and recorded agreement. Said waiver must be recorded with the Freeborn County Recorder's Office.

(5) *Noise Compliance Responsibility*. If noise levels exceed permitted limits at a non-participating dwelling or non-participating occupied structure, the developer is solely responsible for mitigation. All corrective measures must be implemented without requiring any modification to the non-participant's property or any change in occupant behavior unless the owner provides written, notarized consent.

(6) Sec. 26-86. – Agricultural Impact Mitigation Plan.

The Applicant shall submit an Agricultural Impact Mitigation Plan (AIMP) detailing measures to prevent or mitigate adverse effects on agricultural land during the construction, operation, maintenance, and decommissioning of the Project. The primary objective of the AIMP is to protect soil health, ensure soil restoration to its preconstruction condition, and maintain the viability of the Project area for agricultural use after the Project's lifespan. The AIMP must include, but is not limited to, the following elements:

(7) *Overview*. The AIMP must include a comprehensive Project overview detailing the general background of the Project, a complete list of all Project components, and a detailed construction timeline.

(8) Best Management Practices During Construction and Operation:

a. Best Management Practices (BMPs) shall be included that demonstrate Low Impact Development (LID) measures the Applicant will take during construction to minimize negative impact on long-term soil health and future agricultural viability. BMPs should preserve topsoil, reduce or eliminate compacted soils, test and design the Project with regard for protection of existing soil profile below 12 inches, include robust long-term soil health monitoring protocols, address invasive species prevention and mitigation, and establish and maintain suitable vegetative ground cover.

(9) Subsurface Drain Tile Outlet Restoration.

a. All private drain tile outlets to public ditches in the Project area must be identified and restored if damaged during the installation, ongoing operation, and decommissioning of the Project.

(10) *Soil Monitoring and Remediation Plan.* The objective of the Soil Monitoring and Remediation Plan is to ensure that soil conditions within and surrounding the Project site are maintained and monitored to prevent pollution and to address any contamination promptly and will contain the following elements.

a. Pre-Construction Baseline Testing: The plan will conduct a pre-construction soil test to establish baseline conditions. The locations for baseline testing will be determined by an independent third-party professional. Soil samples will be collected at both topsoil and subsoil depths and sent to a certified laboratory for comprehensive analysis.

b. Analysis Parameters:

1. *Battery*. The plan will require that a qualified laboratory analyze the samples, to the greatest extent practicable with the resources available, for the presence of heavy metals like lithium, cobalt, nickel, and manganese, which are common in battery components. Hazardous chemicals, including organic solvents, acids, plasticizers, brominated flame retardants, and PFAS, shall be included. Analysis shall also cover sulfur compounds, graphite or carbon dust, and any degradation byproducts capable of releasing toxic compounds.

c. Follow-Up Testing: The plan will ensure regular follow-up soil testing at ten (10) year intervals. A final test will be performed at the time of decommissioning.

d. Soil Sample Collection After Damage: In the event of damage or leakage, the plan will require soil samples to be collected within thirty (30) days from the directly affected area to assess any potential contamination. This is crucial to identify and mitigate any pollutants that may have been released due to the damage.

e. Contamination Remediation: A remediation plan must be developed, specifying the steps to be taken if contaminant levels exceed acceptable thresholds. The plan must detail the necessary actions to remove or mitigate contaminants and debris, restore soil health, and ensuring the safety and sustainability of the soil environment at the Project site.

f. *Record Keeping*. All records of soil testing and remediation efforts will be submitted to the Zoning Administrator to ensure transparency and regulatory compliance.

(11) Soil Protection and Compaction Avoidance.

a. The plan will include, at a minimum, a narrative outlining Low Impact Development (LID) construction practices and methods to be used during each stage of construction to protect and preserve topsoil. These practices and methods should address:

1. Topsoil removal, segregation, stockpiling, replacement during backfill, and re-spreading.
2. Minimization of grading.
3. Prevention of soil compaction.
4. Management of wet weather conditions.
5. Post-construction decompaction.

b. All Project areas utilized for crop production at the time of permit issuance are required to be planted with a cover crop between the time of harvest and the commencement of Project construction. Bare black dirt and erodible surfaces should be avoided to the greatest extent possible.

(12) Grading, Erosion Control and Stormwater Management Plan.

a. The plan will include a comprehensive Stormwater Management and Erosion Control Plan for review and approval by local jurisdictional authorities. This plan must include the following elements:

1. Analysis of Stormwater Runoff: A detailed analysis of pre- and post-development stormwater runoff rates, along with strategies for pollutant removal, flood reduction, and associated impacts. Stormwater detention or infiltration practices must be implemented as necessary to ensure no net increase in stormwater runoff from the site.
2. *Erosion and Sediment Control Plan*. An Erosion and Sediment Control Plan must be established, detailing temporary and permanent measures to control erosion and sediment both during and after construction. These measures should prevent damage to adjacent areas and sediment-laden runoff into waterways while detailing methods to control changes in drainage patterns and manage stormwater effectively to maintain the site's environmental integrity.
3. Site Landscape Changes: An outline of all proposed changes to the site landscape, such as clearing, grading, topographic alterations, and tree removal.
4. All other requirements and standards of the MPCA Stormwater Construction Stormwater Permit Requirements.

(13) *Environmental Resource Mapping.* The plan shall include an Environmental Resource Map, including a wetland delineation, prepared by a professional wetland delineator certified in accordance with the Wetland Conservation Act (WCA). The map must detail all environmental features within and extending two miles beyond the Project boundary, including but not limited to wetlands, floodplains, watercourses, public and private ditches, and sensitive habitats. Any

identified impacts to wetlands must be mitigated as required by Minnesota Statutes Chapter 103G and Minnesota Rules Chapter 8420.

(14) *Spill Prevention Plan*. As part of the AIMP, the Applicant shall develop a Spill Prevention Plan (SPP) to prevent and manage spills of hazardous materials during construction, operation, and decommissioning phases. The plan must include:

a. *Hazardous Materials Identification*. A list of hazardous materials used or stored on-site, including fuels, chemicals, and lubricants.

b. *Spill Containment and Response*. Procedures for spill prevention and response, including secondary containment systems and cleanup materials.

c. *Reporting and Documentation*. Clear procedures for reporting spills, including contact information for responsible parties and local authorities. All spills must be documented, investigated, and reported to the Freeborn County Zoning Administrator.

d. *Monitoring and Maintenance*. Regular inspection and maintenance of containment systems and equipment to ensure functionality.

(15) *Monitoring.* The plan must include provisions for on-site monitoring to be conducted by an independent, third-party professional approved by the County Board. This monitoring will occur throughout the construction phase and must adhere to the following requirements:

a. Monitoring Reports: The third-party professional is responsible for monitoring and verifying the adherence to the AIMP during the construction period and must submit detailed reports of their findings to the Zoning Administrator every 30 days during the construction period.

b. Verification and Monitoring Responsibilities: The third-party professional is responsible for verifying and monitoring the following aspects during and after construction:

1. Methods for soil segregation, stockpiling, back-filing, and re-spreading.
2. Procedures for trenching and foundation installation.
3. Practices to avoid soil compaction and to implement decompaction.
4. Adherence to the Grading, Erosion Control, and Stormwater Management Plan.
5. Planning for construction activities during wet conditions.
6. Integrity and function of any drain tile system associated with the Project.
7. Implementation and effectiveness of sediment control measures.
8. Installation and operational effectiveness of stormwater management structures.
9. Prevention and mitigation of invasive species.

Sec. 26-87. – Wildlife and Habitat Assessment and Mitigation Plan.

The Applicant must submit a comprehensive Wildlife and Habitat Assessment and Mitigation Plan (WHAMP) for review and approval before any construction begins. This plan must detail strategies to avoid, minimize, or mitigate detrimental direct or indirect impacts on existing wildlife and habitats during the construction, operation, maintenance, and decommissioning phases of the Project. The WHAMP shall include:

(1) Species and Habitat Analysis:

a. An inventory of species known to inhabit or potentially utilize the Project area, focusing on species of special concern, listed species, migratory birds, and game species.

b. Identification of critical habitats, including breeding areas, foraging grounds, and migration corridors.

(2) Impact Assessment:

a. Evaluate the potential impacts of the Project on wildlife and habitats, considering both direct effects (e.g., habitat loss) and indirect effects (e.g., changes in behavior due to noise or light).

b. Analyze the potential for habitat fragmentation, assessing how the Project might alter existing wildlife movement patterns.

(3) Mitigation Strategies:

a. Avoidance: Propose design modifications or alternative locations to avoid sensitive areas.

b. Minimization: Describe measures to reduce impacts, such as timing restrictions to avoid critical life stages of wildlife, use of wildlife-friendly fencing, and noise reduction techniques.

c. Mitigation: Outline compensatory actions like habitat creation or enhancement elsewhere, corridor restoration for movement and migration, or participation in conservation banking for offsetting impacts.

(4) Wildlife Movement:

a. The plan must address how to maintain or enhance wildlife movement through or around the Project site, including:

1. Designing the Project to include corridors or gaps for wildlife passage.

2. Ensuring that fencing does not impede wildlife movement with considerations for species-specific needs.

b. Monitoring and Reporting:

1. Include a schedule for monitoring wildlife and habitat conditions post-construction to assess the effectiveness of mitigation measures.

2. Require annual reports to the County detailing observed impacts, the success of mitigation strategies, and any adaptive management actions taken.

(5) *Consultation and Compliance*. The plan must be developed in consultation with the Minnesota Department of Natural Resources (DNR), U.S. Fish and Wildlife Service, and other relevant agencies to ensure compliance with federal, state, and local wildlife protection laws.

Sec. 26-88. – Emergency Response Plan.

(1) Emergency Response Plan Development and Compliance.

a. Prior to the issuance of any permits, the Applicant must collaborate with Freeborn County Emergency Management to develop, implement, and continuously maintain a

comprehensive Emergency Response Plan (ERP). This ERP must consist of two components:

1. Project Owner Emergency Response Plan – outlining the Applicant's responsibilities in the event of an emergency.
2. First Responder Emergency Response Plan – coordinating and funding response procedures with local emergency services.

b. The ERP must address all phases of the Project, from the start of construction through decommissioning and final site restoration.

c. The Applicant shall ensure the ERP is continuously reviewed and updated, when changes in equipment, maintenance or decommissioning practices or other factors make the current plan outdated, in coordination with Freeborn County Emergency Management throughout the operational life of the Project.

(2) Component One - Project Owner Emergency Response Plan.

a. The Applicant shall submit an Emergency Response Plan detailing the Project Owner's specific actions in the event of an on-site emergency. This ERP shall cover the following contingencies:

1. Natural disasters and severe weather events. (e.g., tornadoes, hailstorms).
2. Fires and related incidents. (including electrical fires and equipment malfunctions).
3. Equipment failure incidents. (e.g., structural damage, electrical hazards).
4. Security breaches or criminal activity. (e.g., vandalism or theft)
5. Capacity/transmission disruptions.
6. Environmental hazards, chemical spills, and hazardous material scenarios.
7. Medical emergencies and needed evacuations.

b. The ERP must include:

1. Evacuation procedures – identifying egress routes and emergency staging areas.
2. Site access for emergency responders – including protocols for accessing secured or locked areas.
3. Emergency response procedures to address the immediate emergency created.

(3) Component Two – First Response Plan

a. The Applicant shall, in coordination with Freeborn County Emergency Management and the jurisdictional fire department, develop and implement a comprehensive plan to ensure that local first responders are fully briefed on emergency procedures relevant to the Project. This plan must:

1. Specify Necessary Equipment: Identify and provide for any specialized emergency equipment required to respond to incidents at the Project. Equipment needs shall be determined in consultation with Freeborn County Emergency Management and the jurisdictional fire department.

2. Facilitate Ongoing Training: Ensure that first responders receive initial and regular training on emergency response procedures specific to the Project. Training shall include site-specific hazards, response protocols, and the safe handling of incidents such as fires, structural damage, and electrical malfunctions. Training shall be offered at least annually or as deemed necessary by Freeborn County Emergency Management.
3. Maintain Staffing Levels: Coordinate with local emergency services to ensure that the Project Owner has appropriate staff available to handle potential emergencies related to the Project at all times.
4. Ongoing Coordination and Updates: The emergency response plan shall be reviewed annually in coordination with Freeborn County Emergency Management and local emergency services and updated as determined, or when new technology or equipment is introduced at the site.

b. The Applicant is responsible for all associated costs, including the procurement and maintenance of necessary equipment, providing ongoing training to local emergency responders, and maintaining adequate staffing by the Project Owner to support local emergency response capabilities throughout the operational life of the Project.

(4) Submission of Manufacturer Safety Manuals

a. The Applicant shall provide the Freeborn County Emergency Management office and the responding fire department with a full set of safety manuals for each make and model of inverter, and battery energy storage systems installed within the Project.

b. The provided manuals must include:

1. Emergency shutdown procedures.
2. Fire safety guidelines.
3. Procedures for managing structural damage.
4. Minimum safety distances for first responders and the public during various emergency scenarios, including electrical fires.
5. Evacuation distances for the pubic during various emergency scenarios, including electrical fires.
6. Instructions for emergency personnel to access secured areas of the Project during critical incidents.
7. Comprehensive safety information.

c. The Applicant must ensure that the safety manuals include all necessary operational and emergency procedures required for effective response to any potential safety incidents at the site. This is to facilitate coordinated efforts between the Project Owner and local emergency services.

Sec. 26-89. – Stray Voltage Management

(1) *Baseline Testing*. Within 30 days of commencement of operations, the Energy Storage Systems Owner shall offer baseline stray voltage testing to all residents and agricultural operations within one mile of the Project Boundary or associated electrical collection or transmission

lines. If the offer is accepted by a landowner, the applicant shall hire an independent professional with expertise in electrical systems and trained in stray voltage detection to conduct the testing, following industry standard practices. All costs associated with baseline testing shall be the responsibility of the Applicant or Project Owner.

(2) Stray Voltage Investigation and Mitigation: The Energy Storage Systems Owner shall respond to stray voltage investigation requests within 24 hours and initiate testing by a qualified professional within two working days. If testing is delayed, the equipment causing the issue must be deactivated until the issue is resolved. Testing results shall be provided to the affected parties, relevant state agencies, and the Freeborn County Zoning Administrator within 30 days. Under no circumstances shall an Energy Storage System elevate voltage levels above pre-construction baselines. If the Energy Storage System is found to be the source of stray voltage, the Energy Storage Systems Owner shall be responsible for all costs associated with investigation, mitigation, and any corrective actions necessary to restore pre-construction voltage conditions. This includes, but is not limited to, electrical system modifications, installation of mitigation equipment, and compensation for damages incurred by affected parties. Additionally, the Energy Storage Systems Owner shall fully reimburse affected parties for any costs they have incurred due to the stray voltage, including but not limited to, diagnostic testing, equipment repairs, lost agricultural production, and increased utility expenses.

Sec. 26-90. - Repowering.

All repowering of existing Energy Storage Systems, whether full or par al, must follow the same permitting procedures as that of new.

Section 26-91. - Reporting of Test Results and Reports

(1) *Purpose.* To ensure transparency, accountability, and timely dissemination of data relevant to public health, safety, and environmental integrity.

(2) *Reporting Requirement***.** All test results, assessments, inspections, analytical data, and related reports required by this ordinance—including but not limited to environmental testing, compliance audits, and operational monitoring—shall be promptly submitted to the following entities:

- The Freeborn County Board of Commissioners
- The Freeborn County Environmental Services Office
- All affected jurisdictions, including municipal governments, regulatory agencies, and other relevant authorities within the area of impact

(3) *Submission Timeline*. All required documents must be submitted within ten (10) days following completion of the test, analysis, or report.

(4) *Format and Delivery*. Reports shall be submitted in a format approved by the Environmental Services Office and may be delivered via physical copy, electronic transmission, or through a designated digital reporting portal.

(5) *Failure to Comply.* Noncompliance with the reporting requirements may be subject to enforcement actions.

Sec. 26-92. – Liability.

(1) *Insurance Requirements*. To ensure adequate financial protection against risks associated with the construction, maintenance, decommissioning, and operation of the Energy Storage System, the Project Owner shall maintain general liability insurance for bodily injury and property damage. Coverage limits shall be determined by a qualified professional's risk assessment and subject to minimum requirements set by the Freeborn County Board. The County shall be named as an additional insured with primary and non-contributory coverage. The Project Owner shall provide the County with an annual certificate of insurance and notify the County within 30 days of any increase in coverage, supplying evidence to the Zoning Administrator. Insurance coverage must remain continuous from permitting through decommissioning, with certificates filed before work begins and renewed upon policy expiration.

(2) *Indemnification*. To the fullest extent permitted by law, the Applicant, Project Owner, and Participating Land Owner's shall indemnify and hold the county, its employees, board members, and agents harmless from any action arising out of the construction, maintenance, decommissioning, deconstruction, and/or operation of the Project. This includes the payment of any attorney's fees and costs arising from any action due to or arising from the construction, maintenance, and/or operation of the Project.

Sec. 26-93. - Validity.

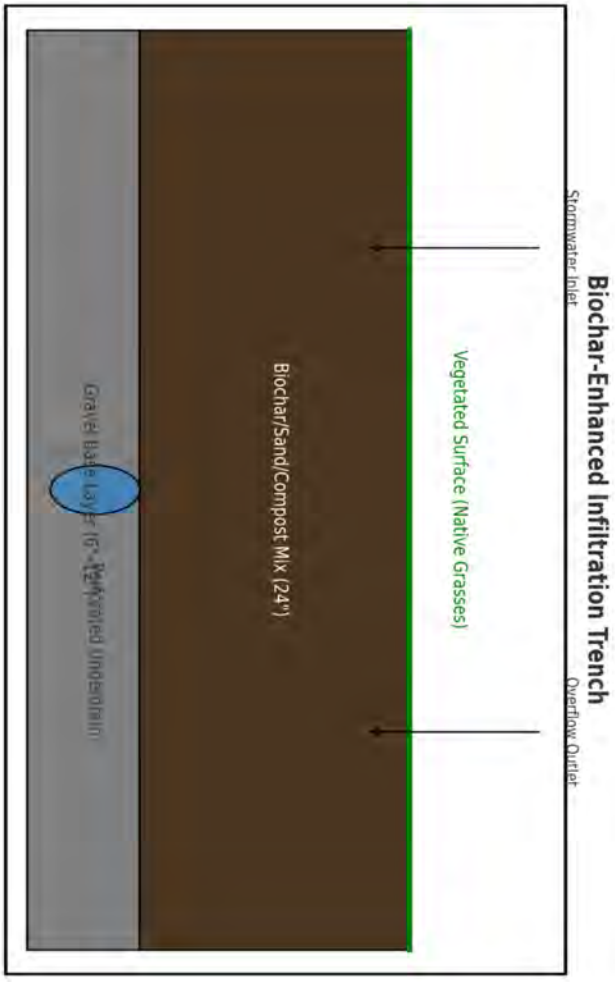
Should any article, section or provisions of this Ordinance be declared by a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the Ordinance as a whole or any part thereof other than the part so declared to be invalid.

Appendix J – Recommendations from the Shell Rock River Watershed District regarding water mitigation measures

Stormwater and groundwater protection

This diagram illustrates a stormwater filtration trench that uses a **biochar/sand/compost mix** for pollutant adsorption, layered above a **gravel base** and **perforated underdrain**, capped by a **vegetated surface**. It's designed to intercept and treat runoff—especially important for BESS sites with fast-draining soils.

Biochar-Enhanced Infiltration Trench – Design Schematic



Example only!

Key Design Specifications:

- Surface Cover: Native deep-rooted grasses (e.g., switchgrass) for evapotranspiration and stabilization

- Filter Media Layer: 24" depth of mix (30% biochar, 50% sand, 20% compost by volume)

- Underdrain: 4" perforated HDPE pipe, centrally located in gravel layer, daylighted or connected to outlet

- Gravel Base Layer: 6"–12" of clean, washed angular gravel (1" size) for drainage and pipe bedding

- Side Slopes: 2:1 max recommended, stabilized with erosion control fabric if needed

- Overflow Outlet: Riprapped spillway or overflow pipe set just below surface level

- Trench Dimensions: Typical width 3–5 ft; depth 2.5–3.5 ft (depending on flow volume and soil infiltration rate)

- Optional Pretreatment: Silt forebay or check dam upstream to trap sediment and floatables.

- Location: Downstream of BESS containment zones or within vegetated swales

- Maintenance: Filter media replaced every 3–5 years, vegetation maintained seasonally

Post-fire groundwater and runoff sampling

Fire departments still use **mass cooling and isolation techniques.** Firewater **must be contained and tested**—Minnesota MPCA guidance still applies. This design should include a stormwater pond with a structure that can shut off the outlet discharge. A secondary precaution would be to install Biochar socks inside the outlet structure to absorb contaminants before they can leave the site.

Appendix K – Aerial photos and video of site location

Link to aerial drone footage of proposed Midwater BESS facility.

Appendix L – Alternative site suggestions

Outlook

Fw: Midwater BESS

From Dan Pfeiffer <dpfeiffer@zanassoc.com>
Date Tue 8/12/2025 10:30 AM
To Thomas Kaiser <tkaiser@zanassoc.com>
Cc Javier Whitaker-Castaneda <jwhitaker@zanassoc.com>

3 attachments (662 KB)
ITC substation SE of Manchester.pdf; ITC Substation west of Hayward.pdf; Midwater BESS possible sites.pdf;

FYI

Dan Pfeiffer | Business Development Director
(He/Him)
Zan Associates
612-759-1083
dpfeiffer@zanassoc.com

From: Tim Kaasa <shellrocktwp.clerk@gmail.com>
Sent: Monday, August 11, 2025 12:01 PM
To: Sullivan, Jim (COMM) <jim.sullivan@state.mn.us>; Harvieux, Jacques (He/Him/His) (PUC) <jacques.harvieux@state.mn.us>; Dan Pfeiffer <dpfeiffer@zanassoc.com>
Subject: Midwater BESS

Good afternoon,
I'm not sure who to include in this email. If you'd like to forward it on to anyone, please do. If this is something that I should be talking on at the next meeting just let me know as well.

The Midwater BESS possible sites attachment shows three locations:
The Dammen land I know has a strong possibility of being for sale. They are selling the parcel with the buildings on it now. The parcel highlighted is the south piece. There is another one to the north as well. This area is next to the sewage treatment plant for Albert Lea and is the area that Mr. Tuma on the PUC asked why they did not look at putting the BESS next to the sewage treatment plant location.

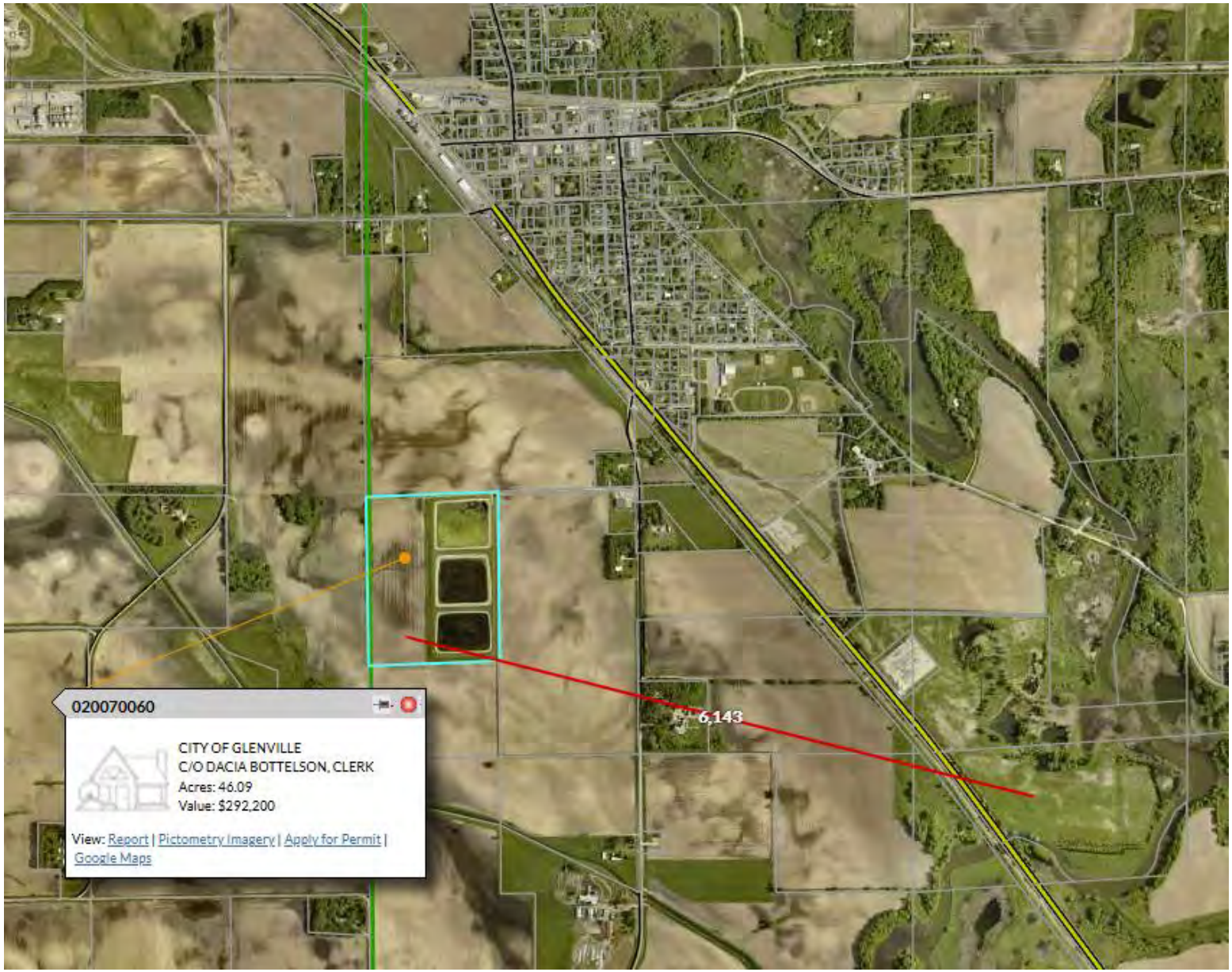
Someone, I thought had mentioned the sewage treatment pond area SW of Glenville as well and I showed this as well. I'm not sure on this one as the close proximity to Glenville.

The other location that Mr. Tuma had mentioned was in the area of the POET ethanol plant west of Glenville as it was an industrial area as well. There are 40 Acres there. I believe they had planned on an expansion and have that land. I'm not sure if they still have an expansion plan or not.

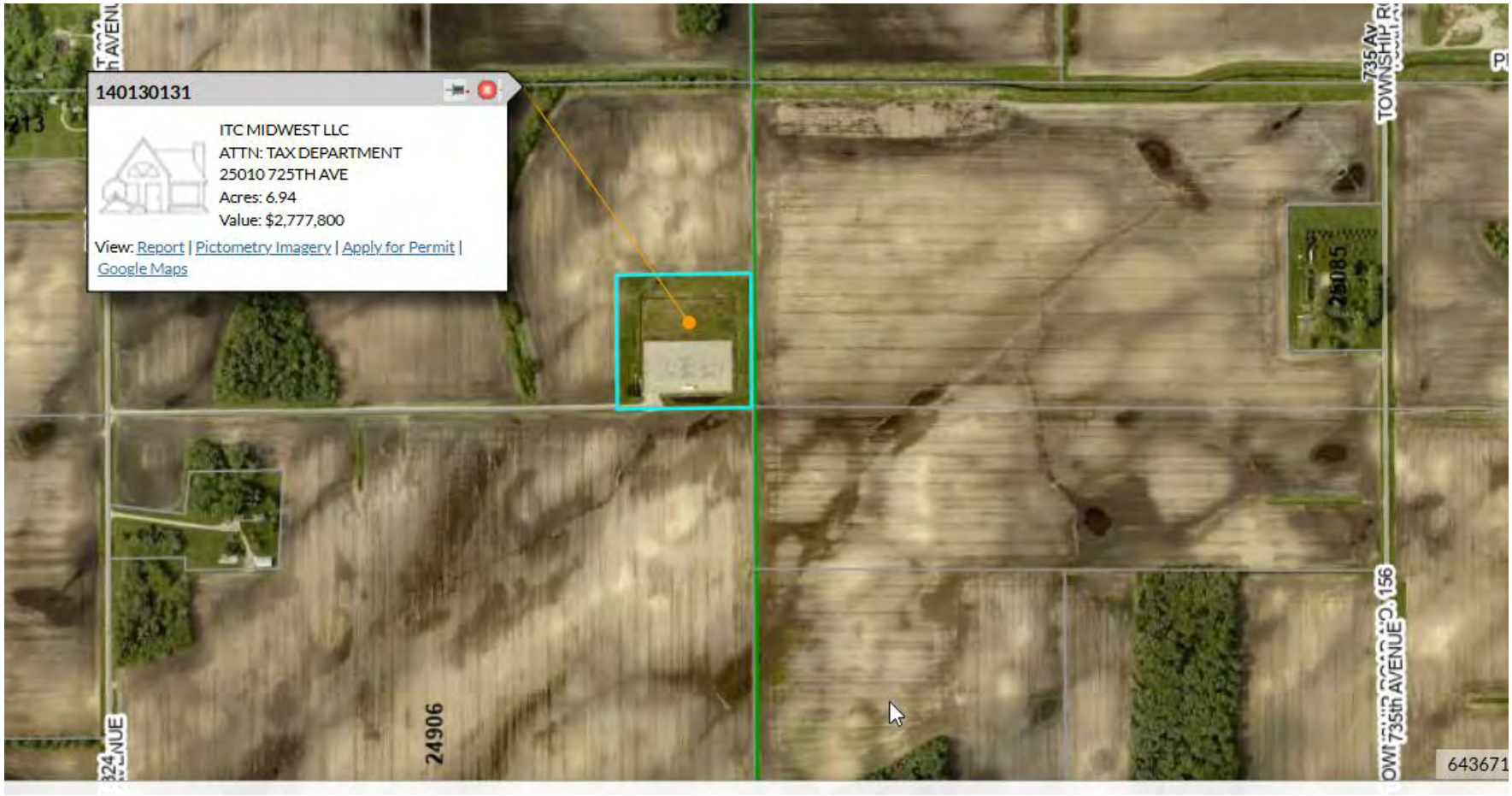
The task force is looking at a connection to the Glenville substation. I have been asked by a lot of people why Spearmint did not look at other locations that are in Freeborn County. For your information, the ITC substation attachments show two other substations with minimal impact locations. The one by Manchester is in the proximity of 100 turbines and another 100 that are planned in the near future to the north.

Thank you,
Tim Kaasa
Shell Rock Township


080250110
DAMMEN,ROBERT L
Acres: 40.00
Value: $354,800
View: Report | Pictometry Imagery | Apply for Permit | Google Maps
19.548
65


020070060
CITY OF GLENVILLE
C/O DACIA BOTTELSON, CLERK
Acres: 46.09
Value: $292,200
View: Report | Pictometry Imagery | Apply for Permit | Google Maps
6,143


030010081
AGRA RESOURCES COOP
C/O POET BIOREFINING GLENVILLE
Acres: 40.00
Value: $341,800
View: Report | Pictometry Imagery | Apply for Permit | Google Maps
12,539



BEACON

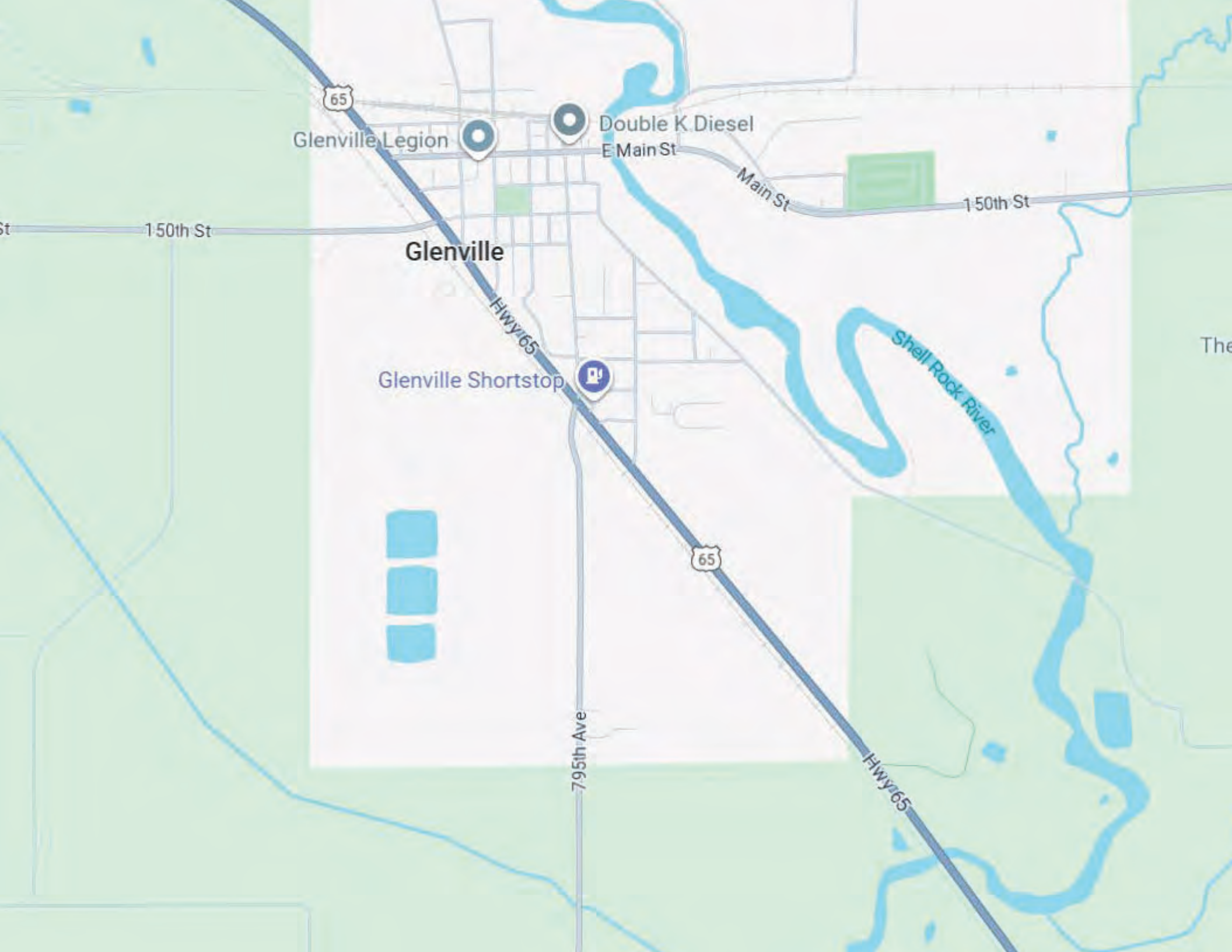
ITC substation SE of Manchester.

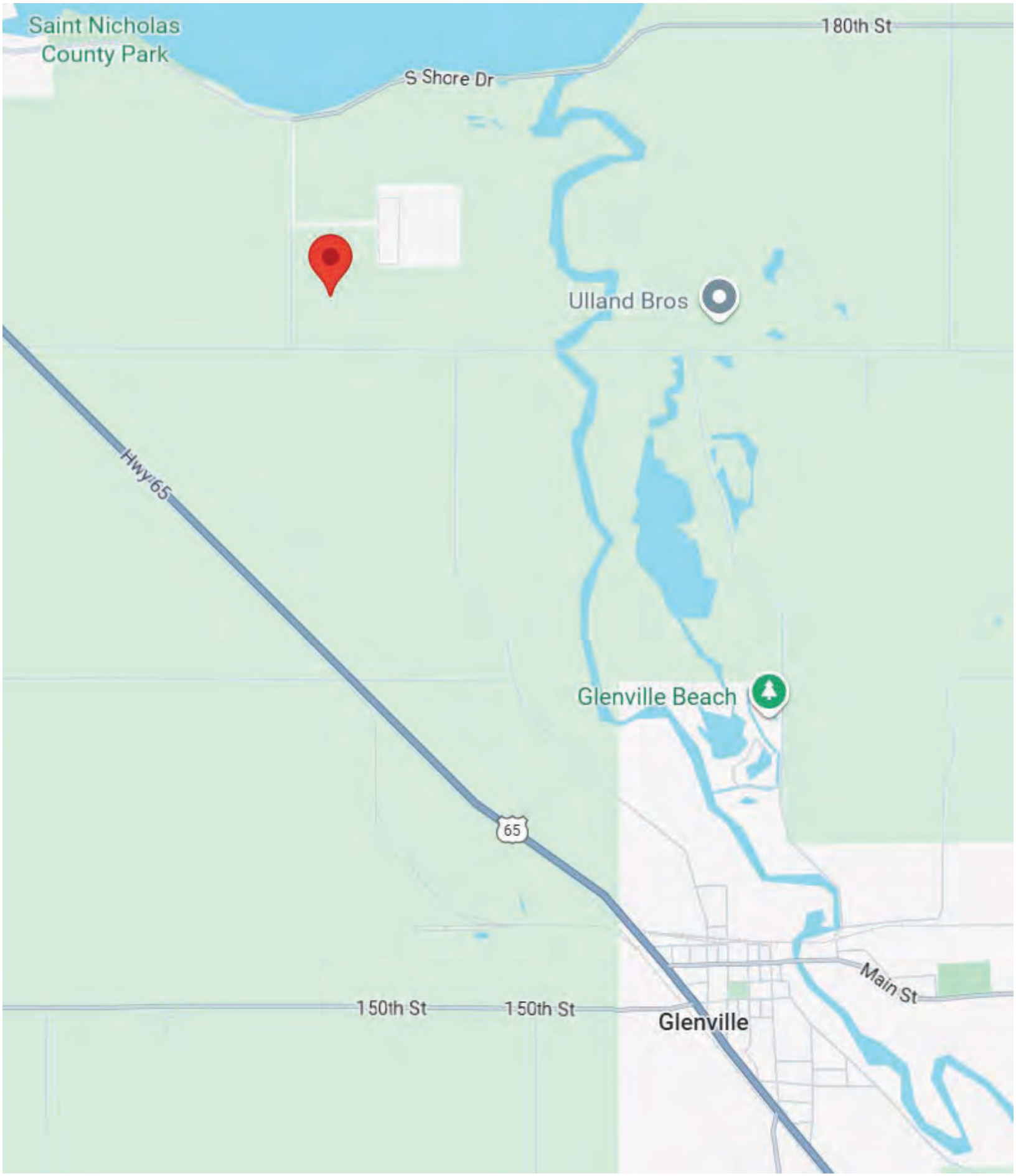
BEACON

ITC substation west of Hayward. Bare land next to substation. DNR has 8.8 acres directly south of this parcel.


ative Sites
sites suggested by Tim Kaasa
Legend
Site Suggested by Tim Kaasa
Site suggested by Tim Kaasa
Site suggested by Tim Kaasa
Gary's Life-Like Taxidermy
Glenville Beach
Shell Rock River
Glenville
Glenville Sportsteg
The Happy Planter
Shell Rock Wildlife Management Area
150th St
Main St
1 mi


ative Sites
sites suggested by Tim Kaasa
Legend
Glenville
Shell Rock River
Avi Ag Airport
The Happy Planter
Glenville-Emmons High School
Site suggested by Tim Kaasa
County Ditch Number Sixteen
River Rd
Shell Rock Wildlife Management Area
2000 ft
e Earth


65
Glenville Legion
Double K Diesel
E Main St
Main St
150th St
St
150th St
Glenville
Hwy 65
Glenville Shortstop
Shell Rock River
The
65
795th Ave
Hwy 65


Saint Nicholas
County Park
180th St
S Shore Dr
Ulland Bros
Hwy 65
Glenville Beach
65
Main St
150th St
150th St
Glenville

Appendix M – Freeborn County archeological inventory

Link to Freeborn County archeological inventory.

Appendix N – Comments from task force on ATF Report

Outlook

Midwater BESS - Task Force Summary and Appendix

From Nicole Eckstrom <Nicole.Eckstrom@co.freeborn.mn.us>
Date Thu 10/16/2025 10:33 AM
To Thomas Kaiser <tkaiser@zanassoc.com>

Hello Tom,

I have listed below comments pertaining to the Task Force Summary.

Impacts and Issues to Study in the EA

P. 8 Alternative Sites:
Although the Task Force focused on the Shell Rock River, the task force frequently discussed the DNR Wildlife Management Area across from the proposed BESS site. In addition, the task force discussed the fact that the Shell Rock River is a designated state water trail. I would like to see those points incorporated in the summary where ever location/proximity to the river is mentioned.

P. 8 Decommissioning
The concern of environmental incidents and burden to taxpayers is not only at the point of decommissioning, but also during the life of the project. Should there be environmental damage and the company declares bankruptcy, etc. (This is mentioned on p. 9 under Financial Liability).

P. 8 Glenville-Emmons is a K-12 school. This is a concern, should an evacuation be required due to a BESS related event, busses will not be onsite/readily available to assist.

P. 8 The task force discussed not only fire hazard, but also concern of thermal events. I believe "Thermal Events" needs to be part of the heading with Fire Hazard. Thermal events can create the release of toxins from the battery housing units and/or other components of the BESS.

P. 9 The county believes there will be minimal tax revenue - unlike revenue from energy production facilities.

Mitigation Measures

p. 11 Include Thermal Event with the heading of Fire Hazard.

P. 11 Visual/Aesthetics/Noise
The draft county ordinance also addresses noise and setbacks, among other key factors.

Identification of Viable Alternative Sites

P. 13

Paragraph beginning with "Concerns about the ..."

Please incorporate DNR Wildlife Management Area across from the proposed BESS site and that the Shell Rock River is a designated state water trail.
Please include thermal events in addition to emergency fire management.

Paragraph beginning with "Task Members express ..."
Please include DNR Wildlife Management Area and State Water Trail.
Please include the task force felt it was inappropriate for the task force to bear the burden of finding an alternative site due to lack of expertise in the requirements of a BESS site, as well as inappropriate for government staff and elected officials to solicit landowners. In addition, the task force was told alternative sites where required within a mile radius, only to be told by Mary Matz during the third and final meeting that sites could have been identified beyond the one mile radius.

Paragraph beginning with "Ultimately, the task force ..."
It is important to include "*due to the restrictions placed upon it*, the task force did not ...

Conclusions (Although my comments below may seem redundant, I believe it is important to be thorough in a conclusion. Especially, if some where to skip reading the contents in the body of the report).

P. 14
No. 1 Please mention the name of Shell Rock River, its watershed, DNR wildlife management area, and the state water trail.

No. 2 Please include thermal events (not just fire).

No. 3 Please include the name of the river, as well as DNR wildlife management area.

No. 4 Please include clean up costs for contamination during the lifetime of the BESS - prior to decommissioning.

Thank you for your work with facilitating the task force, and for bringing the task force duties to completion. Please extend my gratitude to your entire team.

Please let me know if you need clarification on my comments, or have any questions.

Sincerely,
Nicole

Nicole Eckstrom
Freeborn County
5th District County Commissioner
411 Broadway S. Albert Lea, MN 56007
507-391-4402

Outlook

FW: Midwater Bess

From Sullivan, Jim (PUC) <Jim.Sullivan@state.mn.us>
Date Thu 10/16/2025 10:38 AM
To Thomas Kaiser <tkaiser@zanassoc.com>

See below. Can we add this to the report?

From: Tim Kaasa <shellrocktwp.clerk@gmail.com>
Sent: Wednesday, October 8, 2025 9:33 AM
To: Sullivan, Jim (PUC) <Jim.Sullivan@state.mn.us>
Subject: Midwater Bess

Hi Jim,

I forgot to send you a pin for the Poet ethanol plant 40 acres. This is a pin for the land that we talked about.

https://maps.app.goo.gl/YXJRjqrHZbt7g8Qr8

Thanks and let me know if there is anything else you may need.

Tim Kaasa

Outlook

FW: Midwater Bess

From Sullivan, Jim (PUC) <Jim.Sullivan@state.mn.us>
Date Thu 10/16/2025 10:38 AM
To Thomas Kaiser <tkaiser@zanassoc.com>

This is the second one from Tim. Same ask. Thanks!

From: Tim Kaasa <shellrocktwp.clerk@gmail.com>
Sent: Wednesday, October 8, 2025 9:27 AM
To: Sullivan, Jim (PUC) <Jim.Sullivan@state.mn.us>
Subject: Midwater Bess

Hi Jim,

I forgot to send you a pin for the Albert Lea sewage treatment plant area if you need it. This is a pin for the Dammon land that we talked about. Trying to find out if this would be for sale.

https://maps.app.goo.gl/KcD2u8rCsgKdr1WY7

Thanks,
Tim Kaasa

Outlook

Re: Midwater Battery Energy Storage System Task Force Report & Appendix

From Tim Kaasa <shellrocktwp.clerk@gmail.com>
Date Fri 10/17/2025 8:20 PM
To Thomas Kaiser <tkaiser@zanassoc.com>

Tom,
Thank you and your group for doing this.

I would like to see a statement in the conclusions section on the possible impacts on this sensitive area as far as wildlife habitat is concerned as the land is in the conservation reserve program and will have to come out of that program. This area is plentiful in deer, waterfowl and upland game.

Thanks again for your time and consideration in this matter.

Regards,
Tim Kaasa

On Wed, Oct 15, 2025 at 12:19 PM Thomas Kaiser <tkaiser@zanassoc.com> wrote:

> Good afternoon, members of the Midwater Battery Energy Storage System task force,
>
> I wanted to remind you all to look at the final report (shared in previous email on 10/6) and appendix (sent in a separate email on 10/6) and share any questions, edits or suggestions by Monday, October 20.
>
> Please let me know if you're having any trouble accessing either of these files.
>
> Thank you very much!
>
> ---
>
> **From:** Thomas Kaiser
> **Sent:** Monday, October 6, 2025 1:06 PM
> **To:** Sullivan, Jim (PUC) <jim.sullivan@state.mn.us>; Dan Pfeiffer <dpfeiffer@zanassoc.com>; Javier Whitaker-Castaneda <jwhitaker@zanassoc.com>; Adam Hamberg <Adam.Hamberg@co.freeborn.mn.us>; Jeff Fields <jeff@ibewlocal343.org>; Jeff Laskowske <jlaskowske@ci.albertlea.mn.us>; Mike Frank <mfrank@itctransco.com>; Rich Murray <rmurray@ci.albertlea.mn.us>; Tim Kaasa <shellrocktwp.clerk@gmail.com>; melanie.aeschliman@co.freeborn.mn.us <melanie.aeschliman@co.freeborn.mn.us>; Jacques (He/Him/His) (PUC) <Jacques.Harvieux@state.mn.us>; Andy Henschel <Andy.Henschel@co.freeborn.mn.us>; weswebb1@gmail.com <weswebb1@gmail.com>; Nicole Eckstrom <nicole.eckstrom@co.freeborn.mn.us>
> **Subject:** Midwater Battery Energy Storage System Task Force Report & Appendix
>
> Members of the Midwater Battery Energy Storage System task force,

I have attached a draft of the final summary report and shared a link to view the appendix that contains supplemental materials and messages related to the project. To clarify, the report is a Word document attached to this email, but the appendix file is too large to attach to this message. You'll see a separate email from me with the link to that appendix file that I'm also sharing below.

Please take a look at these documents by Monday, October 20, and let me know if you have any questions, edits or suggestions for the final submission.

Here is the link to the appendix:

Thank you all again for all of the time and energy you've put into this process!

Tom Kaiser | Project Manager
(He/Him)
612-355-0542
tkaiser@zanassoc.com

ZAN ASSOCIATES
Creative Engagement
Inclusive Planning
Effective Communications

Minnesota | Oregon | Washington
Certified DBE + WBE + MBE Company