Appendix D

Responses to Data Requests

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	1	Please Respond By:	March 13, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Cost

Table 2.5-1 (Estimated Project Costs) on p. 17 of the application includes capital, operating, and decommissioning costs. The breakdowns in that table make it difficult to determine the estimated capital cost of $214 million. Please provide a breakdown of capital costs. EERA suggests something like the following table:

See table updates below. The increase in total project cost is largely due to the addition of the interconnection and financing line items not previously included. Costs are preliminary and estimated until financial close of the project.

Project Component	Estimated Cost (millions)
Engineering & Design	3
Procurement	130
Construction	71
Development expense (land acquisition, permitting)	11
Interconnection (preliminary)	35
Financing	5
Total Project Cost	255

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	2	Please Respond By:	March 13, 2025

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Question(s): Property Tax Revenue

In the application (pp. 71-72) Snowshoe estimates that the project will generate approximately $18,700 annually in property tax revenue to Olmsted County and Kalmar Township over the 20-year lease.

a. Please clarify whether Snowshoe will pay the tax directly to the county and township or whether the landowner will pay the tax.

   The lease agreement between the landowner and Snowshoe delineates the portion of property taxes that are the responsibility of Snowshoe, which will pay its portion of property taxes to the landowner. The landowner will pay property taxes directly to the county, which will then distribute the taxes to local taxing jurisdictions (e.g., County, township, school district, fire district, etc.) in accordance with the tax levy rates applicable to the property.

b. Please characterize Snowshoe's understanding of how the site is currently taxed (e.g., tax on real property classified as agricultural) will be taxed (e.g., personal property tax, tax on real property classified as industrial).

   The land is currently being taxed as class 2A agricultural property. After the project is constructed, the classification of the land will likely be converted to Class 3a Commercial/Industrial, which has a higher classification rate and fewer applicable tax credits than the current agricultural classification. Based on the Minnesota Department of Revenue's most recent guidance [revenue.state.mn.us], the personal property of the battery energy storage system will be considered locally assessed personal property and will be exempt from property tax. The real property on which the project will be constructed will be assessed by the local county assessor.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	3	Please Respond By:	March 17, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Public Safety

Emergency response plans are a standard condition for site permits issued by the Commission and Snowshoe has indicated its commitment to developing an emergency response plan in collaboration with local officials (application, p.56). There have been a number of safety incidents at energy storage system (ESS) facilities in the United State and abroad (e.g., *State of California Public Utilities Commission, Resolution-ESRP-13*, (https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M555/K812/555812634.pdf) and *EPRI BESS Failure Incident Database*. https://storagewiki.epri.com/index.php/BESS_Failure_Incident_Database).

Based on Snowshoe's understanding of these events and Snowshoe's preliminary design, please discuss:

a. Differences between the batteries and facility design proposed for the Snowshoe facility and other facilities where safety incidents have occurred.

   The battery industry has experienced rapid growth and evolution in the last 10 years, and original systems used different battery chemistries and facility designs than what is being proposed for Snowshoe.

   Battery chemistry[1]

   Older generations of utility scale commercial batteries most commonly used Nickel Manganese Cobalt (NMC) battery chemistry. Today's standard for battery energy storage systems is a Lithium Iron Phosphate (LFP) battery, which is proposed for the Snowshoe BESS facility.

   NMC batteries provide strong bursts of power, known as a C-Rate, making them desirable for on-demand energy. However, they have a relatively low thermal runaway temperature compared to LFP batteries. Lower thermal runaway temperatures in NMC batteries create increased risks related to temperature maintenance and gas detection, and require enhanced monitoring by operators. NMC batteries, which were located inside of a building, were the batteries involved in the notorious "Moss Landing" fire in January 2025.

[1] (Lebowitz, Daly, & Sundaram, 2024)

Due to the higher risks associated with NMC batteries and lowering costs of LFP batteries, the industry pivoted, around 2021, to primarily using LFP batteries in utility-scale applications. LFP batteries have a higher thermal runaway temperature, meaning that they can withstand more heat, making them less prone to failure resulting in fire. LFP batteries are considered to be highly stable and are the same technology used in consumer goods, such as cell phones, laptops, and other mobile devices.

Facility design

Outdoor Modular Containers

The biggest difference between the proposed Snowshoe BESS facility and the facilities where many of the major BESS failure incidents have occurred, in addition to battery chemistry discussed above, are the style of the equipment and the type and robustness of the included safety features of the facility. Unlike what is proposed for the Snowshoe BESS facility, many of the known BESS incidents have been in either indoor or human-occupiable facilities. The proposed Snowshoe BESS facility is an outdoor, modular style non-occupiable installation.

Non-occupiable outdoor installations in modular containers, such as those proposed in the Snowshoe project, pose a lower risk to property and human safety overall as compared to other types of BESS installations where humans can enter the battery container. For example, fires occurring in modular containers, that do not allow internal access for humans, can be easily monitored from a distance without requiring first responders to approach or enter the battery container where thermal event gases will be gathering.

Outdoor modular containers are also used to prevent fires from spreading to other battery containers. Testing is conducted by manufacturers to look at how modular containers react during fire events. During manufacturer specific fire testing, typically fire does not spread from module to module within the container. Moreover, the spacing between battery containers is designed to reduce the risk that fire from one container spreads to another container. Therefore, it is reasonable to expect that one failing BESS module or container will not affect other modules or containers, and any fire is not likely spread to other containers and cause more damage.

Thermal runaway prevention

Unlike first generation battery containers, modern BESS cabinets have explosion prevention systems designed to prohibit the atmosphere of the container from reaching gas levels that can be flammable or explosive by removing flammable gases that are produced during a BESS thermal runaway event. Additionally, cabinets often have panels designed to relieve pressure in a safe direction if a deflagration (i.e., fire) event were to occur. This reduces the safety risk to first responders who may be near compromised BESS containers and also reduces the risk of damage to adjacent BESS enclosures.

The BESS containers proposed for the Snowshoe BESS facility also contain advanced battery management systems, that have improved over time. These systems constantly monitor data points from the BESS, such as cell voltage and temperature, to identify and isolate potential issues before they happen. Battery cabinets also contain fire detection systems to ensure if a failure event does occur, it is quickly recognized and the failed equipment can be disconnected from receiving or transmitting electricity and isolated. These systems ensure that potential safety events are detected early, prevented, or mitigated to minimize their impact.

b. Industry lessons learned about the ESS safety as the industry has evolved. These may include, but are not limited to, potential for fire and thermal runaway events, hazardous waste contamination in the event of fire or other safety events, design for mitigation, inspection schedules, training for operations personnel.

As ESS technology has been examined more closely over the past years, the understanding of the potential safety risks associated with this technology has improved along with technology advancements which are responsive to this increased understanding.

Improved NFPA 855 Standards and required compliance

NFPA 855 - Standard for the Installation of Stationary Energy Storage Systems, now provides more stringent recommendations and requirements concerning ESS installations. These requirements help to mitigate risk associated with ESS installations. Updates to the NFPA standards include:

- All new ESS technology must undergo rigorous fire testing. This allows researchers and engineers to understand how the specific technology may fail and to what magnitude, and to plan for emergencies accordingly. A hazard mitigation analysis (HMA) detailing the results of these tests and the risks associated with the technology must be created and shared with the relevant authorities before BESS installations can be commissioned. HMA plans are typically created prior to delivery of the technology to site, during the financing phase of the project. A copy of the HMA will be provided to the Public Utilities Commission when available.
- BESS must be placed in enclosures that are specifically designed to safely house batteries.
- Enclosures and units must be compartmentalized.

The industry, including Spearmint and its affiliates, e.g., Snowshoe, now install utility scale BESSs in strict compliance with NFPA 855 and UL 9540.

First Responder Training

First responder training is another major lesson learned from previous BESS failures. It is essential that first responders are educated about how to respond if an incident occurs and Snowshoe is committed to providing the appropriate training to local first responders as part of its emergency response plan development and coordination. For example, Snowshoe will convey to local responders that it is recommended that firefighters not intervene with BESS fire events, as there is no known effective way to extinguish these fires or remove the residual charged energy; BESS fires burn themselves out as the energy is depleted from the BESS. Instead, first responders are simply asked to monitor the event in conjunction with Project representatives. In some cases, adjacent enclosures can be cooled by the first responders to mitigate the risk of the fire spreading to adjacent equipment. This limits risk to firefighters by not having them directly fight a fire that has been shown to burn itself out and also helps firefighters keep the incident isolated to the affected unit.

Improved BESS Design and Monitoring

We now know that during thermal runaway events there can be a build-up of gases, which can create hazardous conditions in and immediately around the BESS container. Mitigation requirements for these risks have been identified, such as venting gases from the containers to prevent the concentration from reaching dangerous levels. In some cases, the containers can be designed to release pressure in a controlled manner and in a safe direction. This often involves “deflagration panels” on the tops of units, which purposely fail in the event of a fire to lessen the risks associated with an overpressure situation.

In addition, ESS now include equipment specifically for the purpose of monitoring data points related to thermal runaway and fire events. This equipment is capable of isolating failing ESS containers so that the risk to other containers is minimal.

c. The elements an emergency response plan for the Snowshoe BESS that are specific to an ESS. These may include, but are not limited to, special equipment, techniques, and training that would be different from those typically employed by emergency responders from Olmsted County, Byron, and Rochester.

Generally, an Emergency Response Plan (ERP) for a BESS covers an overview of the site and tactics to respond to potential emergencies. The overview generally covers the layout of the site, the location of important equipment such as emergency stops, safety features incorporated into the BESS, such as an explosion control system, battery management system, fire alarm system, first responder station, or remote emergency stop, and potential hazards posed by BESS and supporting equipment.

The ERP also covers recommended industry accepted tactics to respond to BESS emergencies. Unlike most firefighting operations, the recommended tactic for most BESS emergencies is non-intervention and monitoring. Currently, there is no listed agent or method that can stop a BESS thermal event and the best method to combat the incident is to isolate the affected unit and let it burn itself out, while preventing its spread to adjacent unit. During manufacturer specific fire testing, typically propagation of an incident beyond a module level is not observed within the container. Most failures will consume their electrical potential and self-extinguish. Limited defensive exposure cooling to adjacent BESS cabinets, such as spraying the adjacent unit with water to keep the container cool, may be recommended if certain conditions are present. The ERP will outline those conditions.

ERPs also generally recommend training for local emergency responders. This training usually covers the content of the ERP and a walk-through of the site to ensure responders are familiar with it and the hazards it may pose. We are committed to working with local first responders on development of an ERP and to provide the necessary training.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	4	Please Respond By:	March 20, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Fencing

With respect to fencing for the facility, please provide the following information:

a. A description of the areas that will be fenced. Figure 2 of the site permit indicates security fencing around BESS facility and substation, while the Overall Seeding exhibit included in the draft Vegetation Management Plan Project shows a larger fenced area that includes the stormwater basins and potentially some areas that may be farmed.

   There was an erroneous label (i.e., Proposed Security Fence) pointing to the Project Boundary that required updating on the VMP seeding exhibit to remove this label, please see updated exhibit attached. The plan legend correctly shows the fenced area where the proposed security fence line surrounds the proposed equipment, but there is no proposed vegetation within the project fence. The groundcover within the BESS yard shall be gravel. The remaining area within the Project Boundary, but outside of the fenced area will be either be seeded, as shown in the Seeding Exhibit attached to the VMP, or allowed to remain in agricultural uses.

b. Clarify the number of gates. The figures show one gate off SMMPA's access road to the Maple Leaf Substation, but the text references locked gates.

   A total of two lockable access gates are proposed. One lockable access gate is planned from the private access road into the BESS yard. One lockable gate is planned at the substation entrance.

c. Clarify whether security cameras will be installed at the facility, for example at the gate(s) or along fence line?

   Yes, security cameras will be installed at the facility. Our general requirements for security cameras that we provide to our EPC is typically as follows:

- Locations (a combination of bullet and multisensory, infra-red cameras may be used)
    - One camera with clear visibility of each entrance to the BESS yard and substation
    - One camera per entrance to control house, with view of personnel entering/exiting exterior
    - One camera per entrance to O&M building, with view of personnel entering/exiting exterior
    - Sufficient cameras to provide general views of the BESS and substation perimeter fence
    - Sufficient cameras to provide general views of the interior of the BESS yard and substation. The goals are to have sufficient visibility of unauthorized entry and to be able to check-in on lone workers remotely in the event of a safety concern.

d. If applicable, please describe lighting along the fence line.

   No lighting along the fence line or gate entry is currently planned.

e. Provide Snowshoe's response to DNR's comments on fencing in its letter of December 23, 2024 (eDocket ID: 202412-213309-01).

   Snowshoe can accept the 10' high fencing but from a security and safety perspective of the facility, barbed wire is necessary.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	5	Please Respond By:	March 20, 2025

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Question(s): Construction

Please clarify some of the construction-related requirements for the facility.

a. Provide an estimate of the duration of construction in weeks or months.

   Construction duration will vary based on technology selection and other detailed design elements not yet determined. However, typical construction timeframes range from 9 to 12 months from the start of civil works through initial commissioning. Additional commissioning and troubleshooting may extend beyond this timeline, but work during this extended time would most closely resemble plant operations.

b. Describe the major sources of construction noise.

   Construction noise impacts will be temporary and limited to daytime hours to the extent practicable. During construction, noise will be emitted by construction vehicles and equipment. Noise levels will vary based on the phase of construction that is occurring and the type of construction equipment being used at the Project on a given day.

c. Specific types of equipment that may be used during construction are provided for in Section 4.3.1 of Snowshoe BESS, LLC Site Permit Application. Clarify how deep will the 34.5 kV feeder lines be buried.

   The 34.5kV MVAC cables will be buried at 42” depth.

d. Describe in greater detail how the batteries and BESS enclosures will be installed at the facility. Please provide information on dimensions of the BESS foundations, whether the BESS foundation will be supported by footings or directly embedded in the ground, the sequencing of the BESS foundations relative to the establishment of the drive area, how

the BESS enclosures will be installed on the foundations, and how the heating, ventilation, and air conditioning equipment is installed for each BESS enclosure.

Specific installation designs vary based on equipment selection and site geotechnical conditions. Cast-in-place reinforced slab foundations formed with wood or composite forms and containing rebar and poured concrete may be used, especially for lighter weight non-battery equipment. The majority of equipment will likely be placed on wide-flanged section piles or helical piles which will be driven or screwed into place utilizing equipment specific for that application. Typical equipment will be approximately 8’ x 20’ and placed on 6 to 10 pilings with pile caps bolted or welded to them and the equipment bolted or welded to the pile caps.

Typical construction sequencing of the BESS foundations in relation to the establishment of the drive area will be the following:

- Installation of underground cables and/or conduits, based on the project-specific design.
- Installation of driven piles that will serve as the foundation of the BESS enclosures.
- Equipment will then be placed on those foundations and additional surfacing materials added once other ground disturbing activities are completed.

The BESS equipment the project plans to deploy will come with factory installed HVAC units, and therefore no site installation will be required.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	6	Please Respond By:	March 20, 2025

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Question(s): Restoration

The discussion of site restoration in Section 4.3.3 of the application and in the vegetation management plan indicate that the restoration will include a mix of re-seeding with an open space seed mix (MnDOT Mesic Inslope Mix) and return to agricultural use in some areas. The Overall Seeding Exhibit in the vegetation management plan indicates an irregularly shaped prairie seeding area within the fence line on the eastern portion of the site that borders an area described as "unseeded area to remain for agricultural purposes."

a. Discuss the rationale between reseeding only a portion of the site while maintaining agricultural uses within the fenced area.

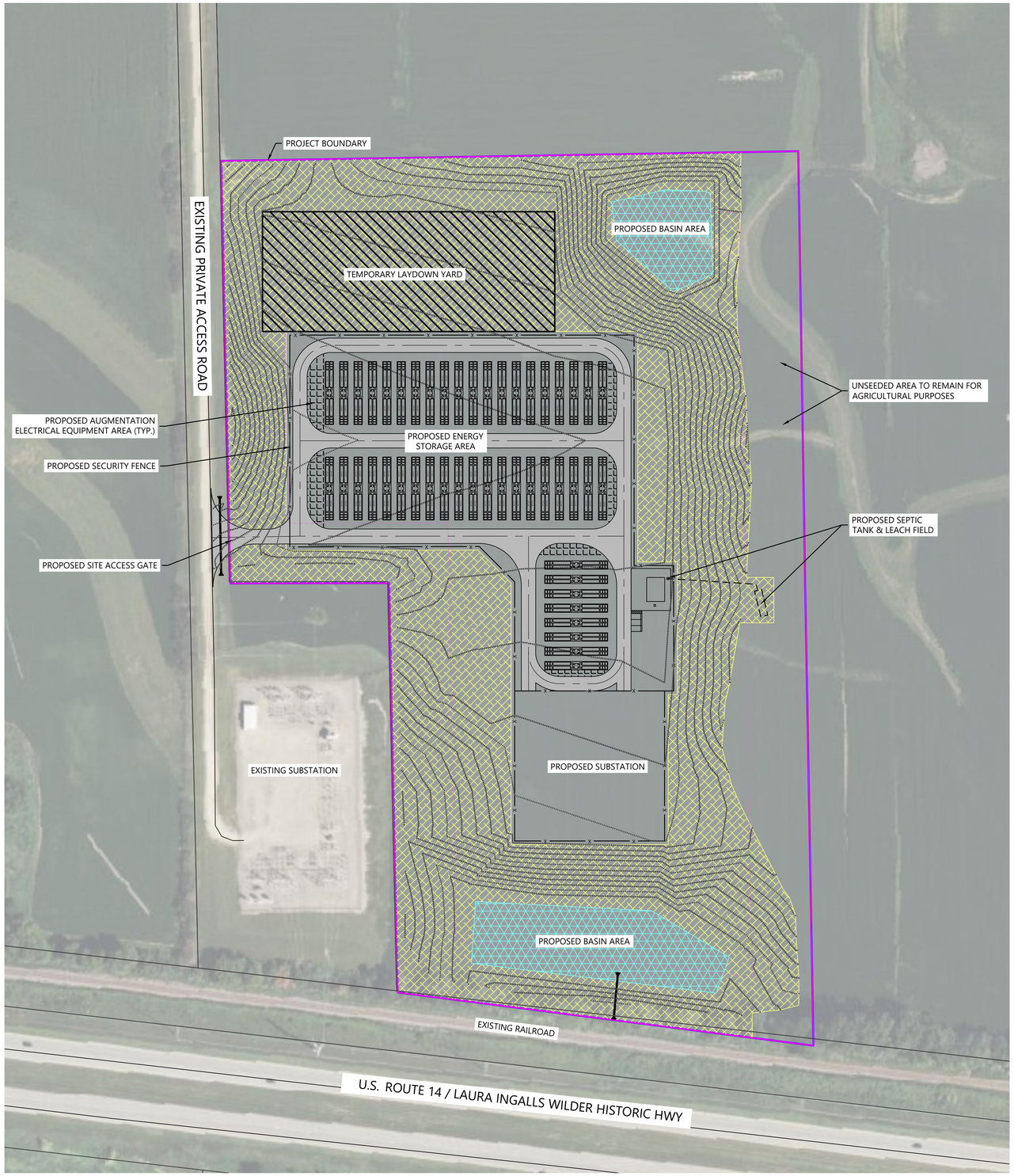
Security fencing is proposed around the Project Substation and around the perimeter of the BESS equipment, *not* the Project Boundary. Figure 10 of the VMP incorrectly labeled the Project Boundary as "Proposed Security Fence". Please see revised Overall Seeding Exhibit attached, which correctly shows the location of the proposed security fence. There is no proposed vegetation or agriculture within the security fence area. The groundcover within the security fenced area and to a distance of up to 5 feet outside the fenced area shall be gravel; areas within the Project Boundary but outside of the security fence will be either seeded or returned to agricultural use as detailed on the attached revised Overall Seeding Exhibit. The portion of the Project Area outside of the fence that is proposed to be seeded is that area that will be graded during Project construction and may not be conducive to row crop agriculture due to the resulting slope of the ground surface. The portion of the Project Area that is intended to be reverted to agricultural use is unlikely to be graded during construction and therefore will retain similar topography to pre-construction conditions, which is conducive to row crop agriculture.

b. Discuss what types of agricultural uses are contemplated within the fence line, and how that area can be accessed. The seeding exhibit indicates only one gate at the main entrance.

   See above. There is no proposed agricultural use within proposed security fence.

c. Please explain how the boundary between the prairie and agricultural area will be maintained and how the different uses (prairie and agricultural purpose) can occur within the fenced area.

   The seeding limit shown on the plan is primarily driven by site grading to establish vegetation on slopes to reduce erosion across the Project site. The portions of the Project site along the eastern edge of the Project Boundary that have previously been used for agriculture, and are unused by the Project, will continue to remain in agriculture or as otherwise directed by the landowner. The seeded areas will be maintained per the Vegetation Management Plan (VMP). Additionally, please see responses to 6.a. and 6.b above.



SEEDING LEGEND:

- MNDOT Mesic Inslope Seed Mix (MI) Total Area: 14.6 ac
- MNDOT Wet Ditch Seed Mix (WD) Total Area: 1.5 ac

LEGEND:

- PROJECT BOUNDARY
- PARCEL LINES
- SETBACK LINES
- POH — EX. OVERHEAD POWER
- x — PROPOSED SECURITY FENCE
- PROPOSED ACCESS ROAD
- PROPOSED CULVERT
- TEMPORARY LAYDOWN YARD
- PROPOSED BATTERY STORAGE EQUIPMENT
- AUGMENTATION ELECTRICAL EQUIPMENT AREA

0' 100' 200' 300'

Snowshoe Energy Storage Project

Olmsted County, Minnesota

OVERALL SEEDING EXHIBIT

NOT FOR CONSTRUCTION

DATE: 03/12/2025

REV:

SHEET: E.001

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#	DATE	COMMENT	BY	CHK	APR
A	03/12/2025	LABEL UPDATE			

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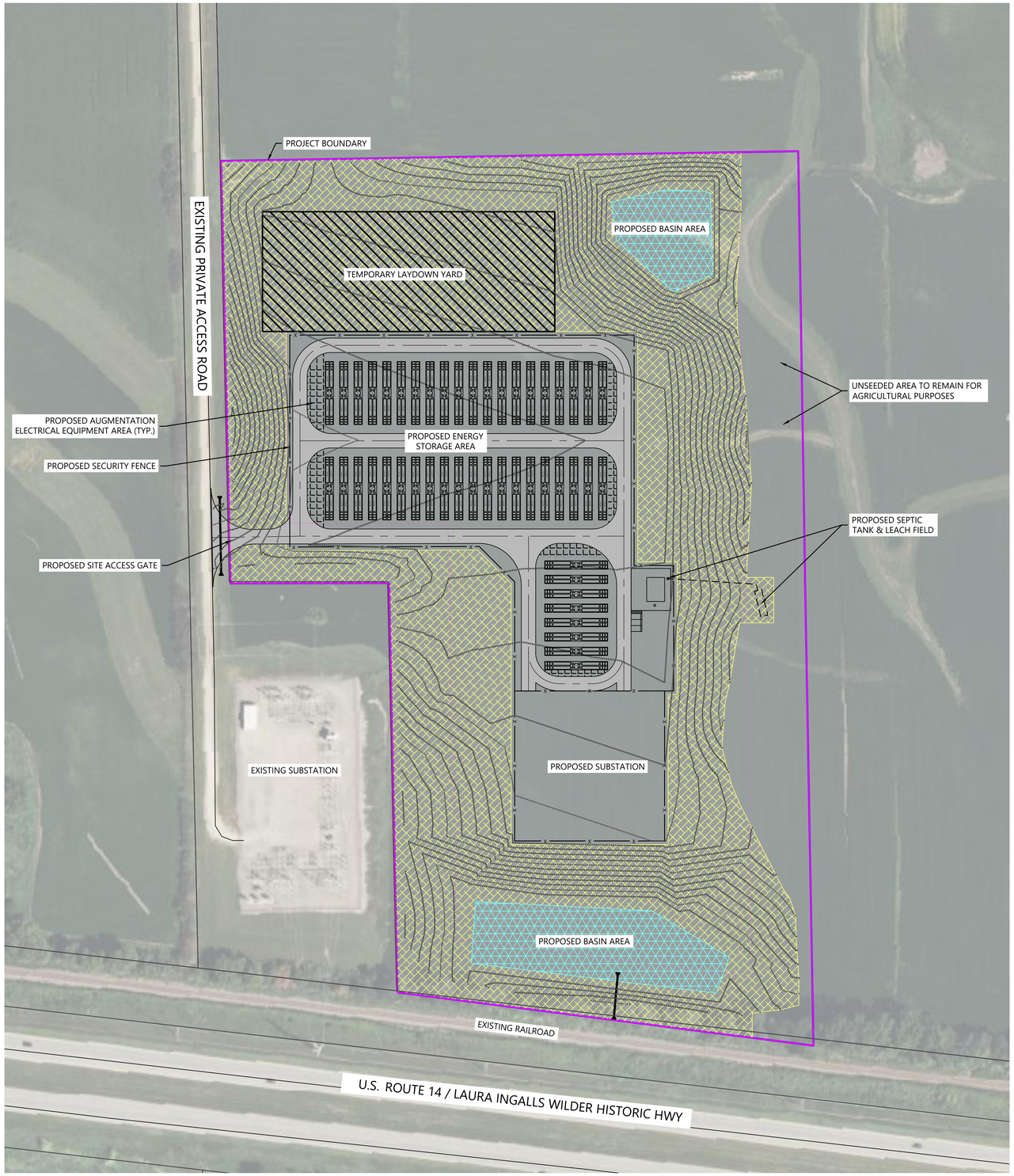

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0' 100' 200' 300'

Snowshoe Energy Storage Project

Olmsted County, Minnesota

OVERALL SEEDING EXHIBIT

NOT FOR CONSTRUCTION

DATE: 03/12/2025

REV:

SHEET: E.001

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#	DATE	COMMENT	BY	CHK	APR
A	03/12/2025	LABEL UPDATE			

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Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	7	Please Respond By:	March 25, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Augmentation

The application (p. 23) indicates that battery augmentation may involve either the addition of battery modules within the existing enclosures (Scenario 1) or the installation of new enclosures and new batteries (Scenario 2).

a. Please discuss the factors Snowshoe will consider in determining which scenario to pursue for the battery augmentation.

The primary deciding factor for battery augmentation approach will be driven by the technology used for the project. Specific manufacturers incorporate provisions for augmentation at either the battery container or "block" level. See question c. below for further details. The battery augmentation will be located in specific areas reserved within the site either within the battery equipment, adjacent to the initial batteries or within "block" gaps left in the initial design. For the purposes of layout and noise impact analysis, the layout assumes the second, most conservative, scenario where augmentation batteries are placed directly adjacent to the initial batteries. The layout submitted shows the maximum space that the BESS arrangement and associated BESS augmentation could utilize.

b. Understanding that Snowshoe has not yet selected the equipment, and that battery technology is rapidly changing, please provide an estimated frequency for augmentation (e.g., every 36 months, every five years, every eight – ten years, etc.).

The augmentation frequency will depend on several factors, some of which will not be known at the time of the initial commissioning of the site. The design assumes that augmentation installations will happen within the approximate range of every 3 to 7 years based resulting in 2 to 6 augmentation cycles. Generally, shorter augmentations cycles will be associated with smaller augmentation installations. However, the operational conditions of the site, actual-versus-theoretical degradation of the cells, future changes in technologies, and other unknown or unforeseen conditions may result in variations from the initially anticipated approach.

c. Please describe the augmentation process for both scenarios. Discuss changes to the power conversion system, installation of new foundations, whether temporary improvements such as driveway widening will be required, considerations in incorporating different battery technologies into the existing system, anticipated facility downtime, etc.

As with the previous responses, unknowable future conditions may impact the scenarios discussed, but a general description follows. With Scenario 1, the equipment installed at the beginning of life will contain unused space (either within skids or as adjacent space or foundations) for additional batteries and related components to be installed at a later date. As an example of installing within a skid, one product has space for 10 "racks" of equipment, but only 8 installed when arriving on site for initial design, with 2 empty spaces available for future racks that can be shipped to site as a package, installed with a forklift into the empty space, and then electrically connected to the initial beginning-of-life unit. The layout for this project leaves space adjacent to the battery skids for new skids to be installed, but is substantially the same as the above, except that additional foundation work may be required. Additional re-programming and other minor manual and computer-related tasks are required before operations for either of these two variants of Scenario 1. In Scenario 2, entire new batteries and typically Power Conversion Systems (PCS), will be brought to site. In this scenario, additional foundations will need to be installed and circuits extended to the location of the new equipment; the equipment itself will be installed in a manner similar to what is done in the initial build. This will involve lifting the equipment from trucks using a crane, placing it, connection of the electrical components, and commissioning of those units. It is not anticipated that either scenario will require any modification of the entry drives or access roads, fence removals, or other major site modifications.

d. Discuss Snowshoe's assumptions at this time about the end-of-life management (removal, transport, potential destination, and potential for re-use and recycling) of used components.

As detailed in the Decommissioning Plan, the batteries will be completely discharged, the various system components will be disconnected, and the units will be transported off-site. At this time, it is assumed that the batteries will be hauled by a licensed battery recycler to their processing facility. Other parts of the battery containers and PCS units will be hauled to local metals recycling facilities to be scrapped for their metal components. Additional surface and buried materials, such as cabling, foundations, surfacing materials, etc., will be fully or partially removed or left in place based on the future plans for the site. Cables, steel piles, copper windings, and other metal components are assumed to have salvage values.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	8	Please Respond By:	March 25, 2025

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Question(s): Noise

Please provide the following information related to noise during project operation and potential noise mitigation measures.

a. Describe the noise at the BESS containers. The application (p. 37) indicates that each BESS enclosure will include HVAC equipment. The Noise Impact Assessment (NIA) specifically included HVAC associated with the O&M building as an input to the noise model but does not address HVAC on the containers. Please clarify whether the 90 dBA sound level assumption for the BESS containers in the NIA includes HVAC equipment at the enclosures.

   In the absence of specific unit selection at the time of the noise study, noise data was derived from the specifications from the industry's BESS integrated models that emit the most sound. Therefore, the study assumed a 90 dBA overall sound power level. The assumed 90 dBA sound power level is inclusive of all noise producing components within each typical BESS enclosure – including the battery, associated HVAC, integrated power conversion system, transformers, and future augmentation. The final noise study will be updated to reflect final equipment selection if the selected BESS units are not integrated BESS units containing both power conversion system (inverter) and batteries, with a total broadband sound power level of 90 dBA or less. If separate batteries and Power Conversion System (PCS)/inverter units are specified, noise study revisions/reissuance will be necessary to establish maximum noise levels for each piece of equipment rather than for the integrated unit.

b. Please provide a map indicating the receptor ids for the 19 nearby residences.

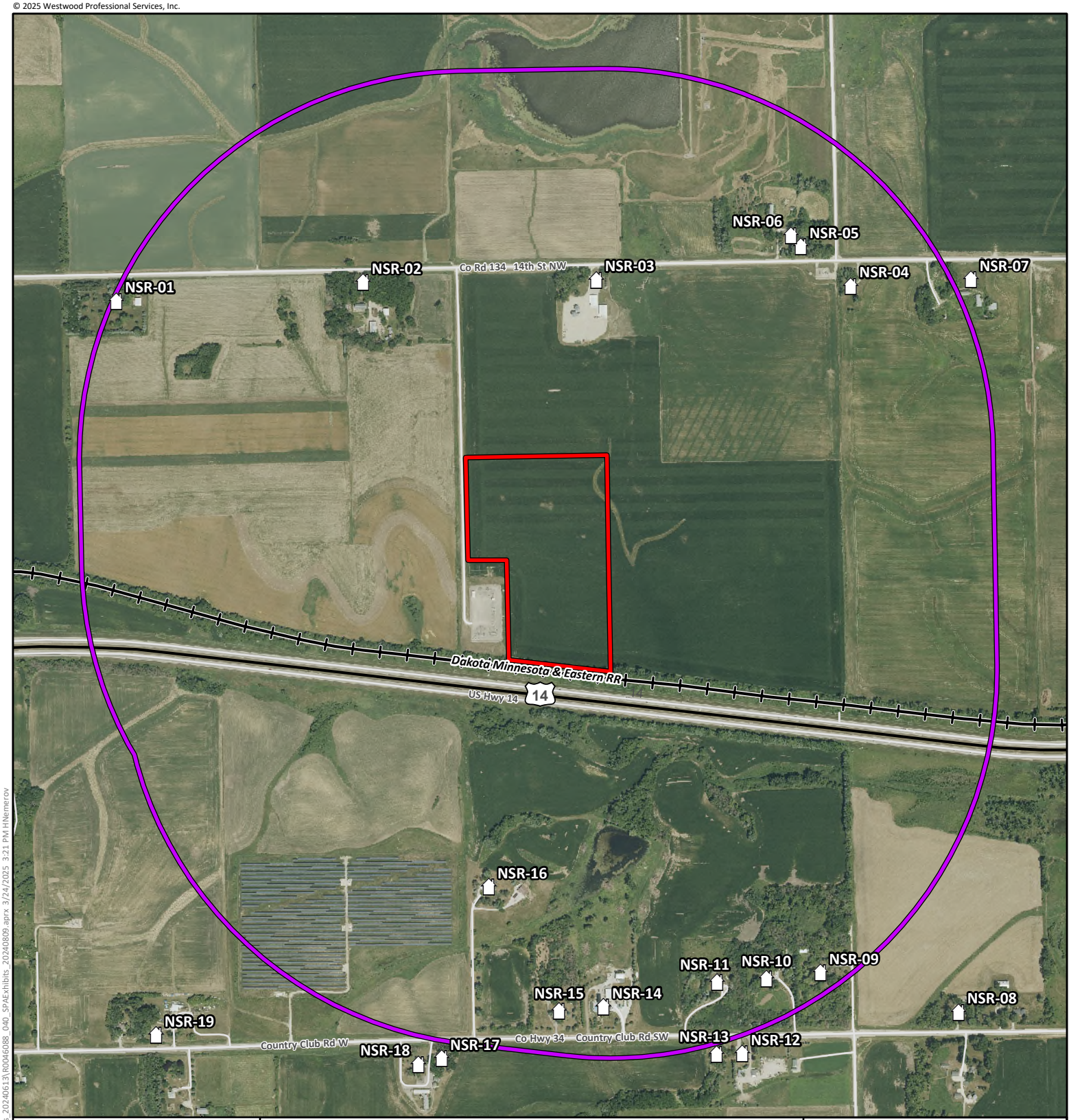
   Please see receptor ID map attached (Exhibit 1 – Receptor Identifications).

c. The application (p. 23) indicates that battery augmentation may involve the addition of battery enclosures with newer batteries and states that Snowshoe has designed the site to accommodate new BESS containers to accommodate augmentation. Please discuss how the NIA incorporates potential changes in configuration of the BESS containers, and how that information can be used by the Commission in its permit decision.

The specified maximum sound power level for each BESS unit is inclusive of any future augmentation at each unit. As described in data request 7 (DR-7), for purposes of layout and noise impact analysis, the layout assumes a scenario where augmentation batteries are placed directly adjacent to the initial batteries. When and if augmentation is proposed, the noise study may need to be revised if augmentation equipment assumed at initial installation does not have integrated BESS units (i.e., units containing all BESS equipment, including HVAC and other noise producing components). Snowshoe BESS, LLC is committed to updating noise studies as required and as necessary at the time of future augmentation to demonstrate adherence to the Minnesota state noise standard.

d. The predicted project-only noise levels (L_{eq}) at the residences within 3,200 feet of the facility boundary vary from 38.1 to 47.7 dBA, and total noise levels range from 45.8 and 49.5 dBA. EERA's wind application guidance recommends project-only noise not exceed 47 dBA. Although the predicted noise level is less than 50 dBA, it is very close for at least one receptor and it is unclear whether those levels may vary over the facility's lifetime if augmentation results in additional or reconfigured BESS containers. Discuss potential noise mitigation measures that Snowshoe will consider employing to minimize noise at nearby residences.

In preparing the Site Permit Application, Snowshoe BESS, LLC referred to the *Application Guidance for Site Permitting of Solar Farms* dated January 2024. The guidance references Minnesota noise standards and noise area classifications (NACs). In accordance with the solar guidance, and other recently filed and approved solar applications such as Lake Wilson Solar + BESS and Sherco Solar 3, Snowshoe BESS, LLC applied the 50 dBA total nighttime noise level limit, using an assumed background noise level of 45 dBA, as defined by MN Rules 7030. The project currently adheres to MN Rules 7030, with all receptors being under the 50 dBA nighttime limit. As previously described, in absence of a specific unit selection, project modeling assumed an integrated BESS unit with a 90 dBA overall sound power level. Snowshoe BESS, LLC is committed to meeting the state noise standard. As project design evolves, and equipment selection is finalized, the noise study can be refined to ensure project-only noise levels at all receptors meet the state noise standard. Snowshoe BESS, LLC does not currently anticipate the need for noise mitigation. Common mitigation strategies available to project developers that Snowshoe BESS, LLC could consider employing, if needed, include, but are not limited to, equipment selection with lower maximum permissible noise level for individual BESS units, noise barriers, or equipment silencers. As discussed above, the specified maximum sound power level for each BESS unit is inclusive of any future augmentation at each unit.



Data Source(s): Westwood (2025); NAIP (2023); Olmsted County (2024); U.S. Census Bureau (2021 & 2023).

N

0 900 Feet

Snowshoe Energy Storage Project

Kalmar Township, Olmsted County, Minnesota

Receptor Identifications - Response to DR-8

Exhibit 1

Legend

- Project Area
- Project Area Half-Mile Buffer
- Major Road
- Road
- Railroad
- Receptor

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March 25, 2025

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	9	Please Respond By:	March 25, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Schedule

Are there any updates to the project schedule described in Section 1.2 of the site permit application (pp. 6-8).

There are no updates to the project schedule at this time.

Response to Energy Environmental Review and Analysis

Questions for Development of Environmental Review

In the Matter of the Application of Snowshoe BESS, LLC for a Site Permit for the up to 150 MW Snowshoe Energy Storage Project in Olmsted County, Minnesota

PUC Docket No.	IP-7138/ESS-24-270	Directed To:	Mary Matze
EERA Question No.	10	Please Respond By:	March 28, 2025

Note: Energy Environmental Review and Analysis staff intends to use information provided in this response to develop an environmental review document and is a public document. Responses to these questions will be considered to be public information unless otherwise designated by the respondent as nonpublic information pursuant to Minnesota Stat. § 13.02.

Question(s): Project Soils

The soils identified at the Snowshoe site in the application (Table 5.5-4 and Figure 7)differ somewhat from those identified in EERA's site review at the NRCS soil survey https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

In particular, the NRCS map shows Tama Silt Loam (N536C2) in the area shown in application materials as Port Byron Silt Loam (285C) and Downs Silt Loam (N501B2) in the area shown in application material as Mt. Carrol Silt Loam ((401B).

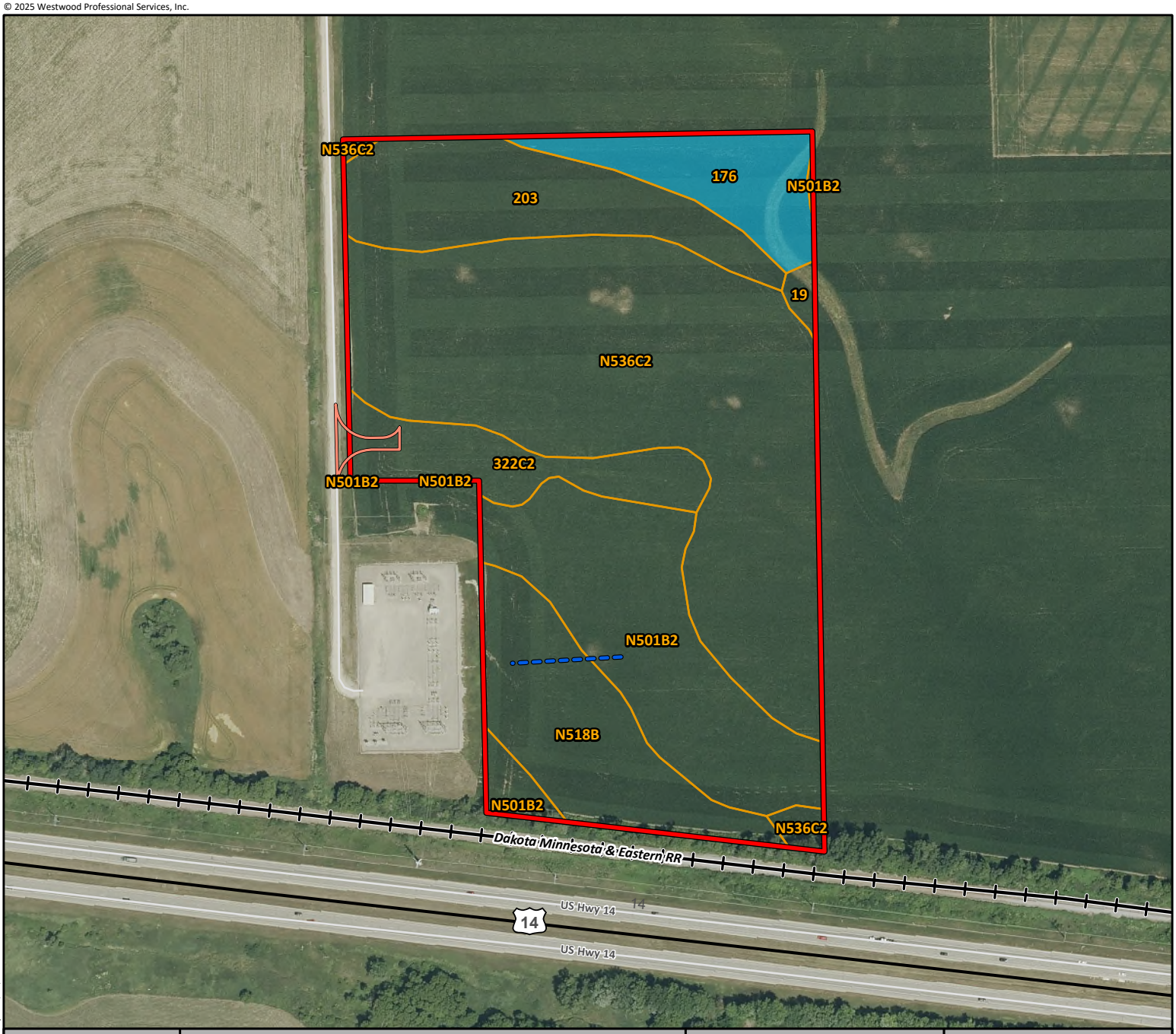
Please review the source material and clarify the soil types. If applicable, please provide updates to Table 5.5-3 and Figure 7.

Snowshoe BESS, LLC created Figure 7 using soil date from the UDSA Web Soil Survey (WSS). The USDA Natural Resources Conservation Service (NRCS) updated their soil database in October 2024 after Figure 7 was prepared and therefore the figure did not reflect the most recent updates to the database.

As requested, Snowshoe BESS, LLC revised Figure 7 and Table 5.5-4: Project Area Soils to reflect these recent changes made to the Web Soil Survey.

Table 5.5-4: Project Area Soils

Map Unit Symbol	Map Unit Name	Farmland Classification	Hydric Classification	Acres
176	Garwin silty clay loam	Prime farmland if drained	Predominantly Hydric Soil	1.8
19	Chaseburg silt loam, moderately well drained, 0 to 2 percent slopes	All areas are prime farmland	Non-Hydric	0.2
203	Joy silt loam, 1 to 4 percent slopes	All areas are prime farmland	Predominantly Non-Hydric	3.3
322C2	Timula silt loam, 6 to 12 percent slopes, moderately eroded	Farmland of statewide importance	Non-Hydric	1.9
N501B2	Downs silt loam, 2 to 6 percent slopes, moderately eroded	All areas are prime farmland	Non-Hydric	5.0
N518B	Lindstrom silt loam, 2 to 6 percent slopes	All areas are prime farmland	Non-Hydric	3.3
N536C2	Tama silt loam, driftless, 6 to 12 percent slopes, moderately eroded	Farmland of statewide importance	Non-Hydric	11.8
Total				**27.2**



Map Unit Symbol	Map Unit Name	Percent Hydric Classification	Hydric Classification
19	Chaseburg silt loam, moderately well drained, 0 to 2 percent slopes	0	Non-Hydric
322C2	Timula silt loam, 6 to 12 percent slopes, moderately eroded	0	Non-Hydric
N501B2	Downs silt loam, 2 to 6 percent slopes, moderately eroded	0	Non-Hydric
N518B	Lindstrom silt loam, 2 to 6 percent slopes	0	Non-Hydric
N536C2	Tama silt loam, driftless, 6 to 12 percent slopes, moderately eroded	0	Non-Hydric
203	Joy silt loam, 1 to 4 percent slopes	15	Predominantly Non-Hydric
176	Garwin silty clay loam	95	Predominantly Hydric Soil

Data Source(s): Westwood (2025); NAIP (2023); U.S. Census Bureau (2021 & 2023) NCRS (Accessed 2025).

N

0 300 Feet

Snowshoe Energy Storage Project

Kalmar Township, Olmsted County, Minnesota

Soils - Hydric Classification - Response to DR-10

Figure 7

Legend

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

Hydric Classification

- Predominantly Hydric Soil

Proposed Site Features

- Proposed Tap Line
- Proposed Access Road

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March 28, 2025