



**APPLICATION FOR A SITE PERMIT FOR THE BLUE
LAKE ENERGY STORAGE PROJECT**

*DOCKET NO. E002/ESS-25-214
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Submitted by
Northern States Power Company, d/b/a Xcel Energy

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List of Acronyms

AADT	Annual Average Daily Traffic
AC	Alternating Current
Application	Site Permit Application
AQI	Air Quality Index
ARMER	Allied Radio Matrix for Emergency Response
BCC	Birds of Conservation Concern
BCR	Bird Conservation Region
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CAA	Clean Air Act
Commission	Minnesota Public Utilities Commission
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COD	Commercial Operations Date
Company	Northern States Power Company or Xcel Energy
dB	Decibels
dBA	A-weighting
DC	Direct Current
DWSMA	Drinking Water Supply Management Area
ECS	Ecological Classification System
EJ	Environmental Justice
EMF	Electric and Magnetic Fields
Envision Shakopee	City of Shakopee's 2040 Comprehensive Plan
EPA	U.S. Environmental Protection Agency
EPC	Engineering, Procurement, Construction
ERP	Emergency Response Plan
ESA	Endangered Species Act
ESS	Energy Storage System
FEMA	Federal Emergency Management Agency
gen-tie	Transmission line generation interconnect
GHG	Greenhouse Gases
GIA	Generator Interconnection Agreement
GIS	Geographic Information Systems
HVAC	Heating, ventilation, and air conditioning

I-1	Light Industrial Zoning District
IBA	Important Bird Area
ICIS-AIR	Hazardous Air Pollution Designated Sites
IEEE	Institute of Electrical and Electronics Engineers
IFC	International Fire Code
IPaC	Information for Planning and Consultation
IRP	Integrated Resource Plan
kV	Kilovolt
kV/m	Kilovolts per meter
Leq	Equivalent sound level
LFP	Lithium Iron Phosphate
Magellan	Magellan Midstream Partners L.P.
MBS	Minnesota Biological Survey
MBTA	Migratory Bird Treaty Act
MDH	Minnesota Department of Health
mG	Milligauss
Minn. R.	Minnesota Rules
Minn. Stat.	Minnesota Statute
MISO	Midcontinent Independent System Operator
MLCCS	Minnesota Land Cover Classification System
MnDNR	Minnesota Department of Natural Resources
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
MVT	Medium Voltage Transformer
MW	Megawatt
MWac	Megawatts Alternating Current
NAC	Noise Area Classifications
NFPA	National Fire Protection Act
NHIS	Natural Heritage Information System
NLEB	Northern Long-eared Bat
NMC	Nickel Manganese Cobalt Oxide
NO ₂	Nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NPMS	National Pipeline Mapping System
NWI	National Wetland Inventory
O ₃	Ozone

O&M	Operations and Maintenance
OSA	Office of the State Archaeologist
PCS	Power Conversion Systems
PM	Particulate Matter
PM _{2.5}	Fine Particulate Matter
POI	Point of Interconnection
Preliminary Development Area	11.9 acres within the Site
Project site (or site)	70-acre property under Company ownership
Q	Quarter
RCP	Representative Concentration Pathway
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposals
ROW	Rights-of-way
RPBB	Rusty Patch Bumble Bee
SCADA	Supervisory Control and Data Acquisition
Settlement Agreement	Comprehensive settlement agreement by Company to resolve issues related to the IRP and a Firm Dispatchable resource acquisition docket
SGCN	Species in Greatest Conservation Need
SHPO	Minnesota State Historic Preservation Office
SNA	Scientific and Natural Area
SO ₂	Sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
UL	Underwriters Laboratories
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
VMP	Vegetation Management Plan
WHPA	Wellhead Protection Area
WMA	Wildlife Management Area

1. EXECUTIVE SUMMARY

1.1 Introduction

Northern States Power Company, a Minnesota corporation (“Xcel Energy” or the “Company”) submits this application to the Minnesota Public Utilities Commission (“Commission”) for a Site Permit for the Blue Lake Battery Energy Storage Project (“Project,” “Blue Lake Energy Storage System” [“ESS”]). The Company is filing this Site Permit Application (“Application”) pursuant to the Minnesota Power Plant Siting Act (Minnesota Statute [“Minn. Stat.”] Chapter 216E and Minnesota Rules [“Minn. R.”] Chapter 7850).

The Company proposes to construct and operate the Project, a battery ESS with a nominal power rating of up to 135.5 megawatts (“MW”) alternating current (“MWac”) with approximately 542 megawatt-hours of energy capacity on a site consisting of approximately 70 acres in the City of Shakopee, Scott County, Minnesota (**Figure 1**). The proposed standalone ESS project would consist of approximately 128 ESS units, 32 medium voltage transformers, and one main power transformer. In addition to battery energy storage units, the Project will consist of inverters and electrical feeder lines, a 115 kilovolt (“kV”) transmission line generation interconnect (“gen-tie”) of less than 500 feet, Project substation, storage, access roads, fencing, and other minor equipment and appurtenant components typical of an ESS project. The Company intends to use a Connex trailer onsite to store spare parts.

While the specific equipment or technology to be used has not been established and will be dependent upon market conditions, equipment availability, battery efficiency, and site impacts at the time of construction, the preliminary design is largely based on lithium-ion, more specifically, Lithium Iron Phosphate (“LFP”) battery technology. LFP batteries have a lower probability of thermal runaway compared to Nickel Manganese Cobalt Oxide (“NMC”) batteries. This is primarily due to the higher thermal stability of LFP materials. Additionally, LFP batteries typically have a thermal runaway onset temperature much higher than NMC, and they release less oxygen upon failure, reducing the likelihood of fire. The utility-scale storage industry has increasingly adopted LFP battery technology due to these favorable safety features described. The modular nature of lithium-ion battery systems allows for easy scalability and augmentation to meet increasing energy storage demands and account for battery degradation over time. Lithium-ion batteries can quickly respond to changes in energy demand, providing immediate support to the grid. The Project has been designed to accommodate a variety of technologies and has adequate room for placement of necessary equipment and supporting elements. The Company is anticipating permit approval and post-compliance filings in the first quarter of 2026 and construction to

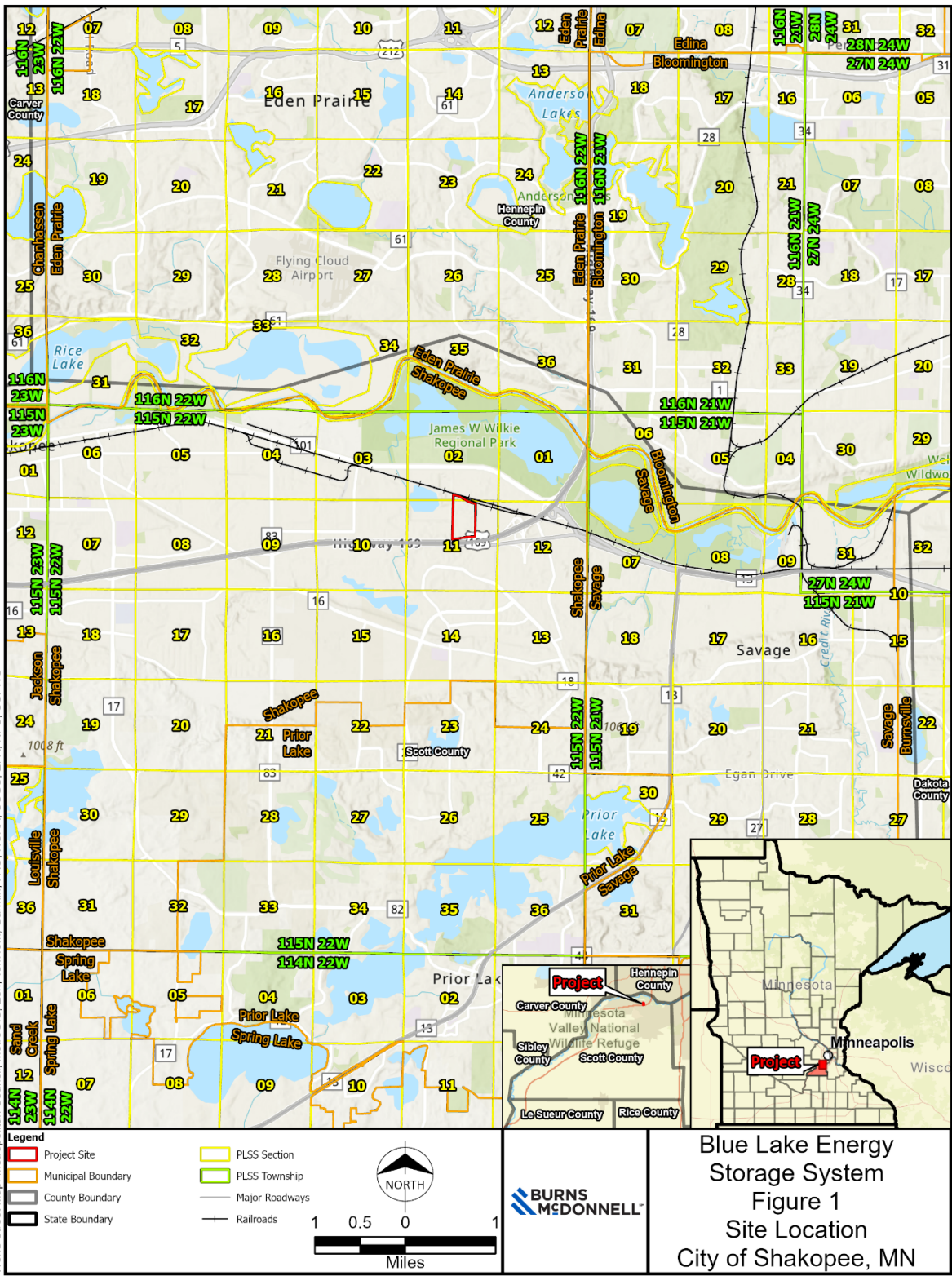
begin in the second quarter of 2026 with a commercial operation date (“COD”) in the second quarter of 2027.

According to the National Land Cover Database, the Project encompasses approximately 70 acres (“site”) of predominantly barren land, with lesser areas of forested lands and developed areas such as the existing access road and pipeline valve site leased by Magellan Midstream Partners, L.P. (“Magellan”; see **Figure 2**).¹ The site refers to all the land under ownership by the Company to accommodate Project development. The Project will interconnect via a single-span 115 kV gen-tie line to the Project substation, and then to the adjacent existing Blue Lake Substation. The existing access road to the Magellan valve site will be modified to better manage access to the Project and Magellan valve site. An existing, inactive pipeline from the Magellan valve site, along the access road and 70th Street S to the Blue Lake Peaking Plant, is present in the site.

Based on the preliminary site plan, Xcel Energy expects the Project to occupy approximately 11.9 acres (“Preliminary Development Area”) of the site. The Preliminary Development Area includes the gravel and class-IV pads containing permanent Project infrastructure in addition to a stormwater management pond, laydown yard, proposed grading areas, access road connection to 70th Street South, and parking and storage areas outside the fence line (**Figure 2**). All Project infrastructure is located within the Preliminary Development Area. Project facilities and systems will include ESS infrastructure (housing batteries, inverters, and skid-mounted medium voltage transformers), a substation, gen-tie line connecting the facility to the existing Blue Lake Substation, access roads, storage and parking areas, a stormwater management pond, a temporary construction laydown yard, and fencing (**Figure 2**).

¹ U.S. Geological Survey. 2019. National Land Cover Database. (available from: <https://www.usgs.gov/centers/eros/science/national-land-cover-database>). Accessed April 2025.

Service Layer Credits: World Topographic Map: Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METINASA, USGS, EPA, NPS, USDA, USFWS
 World Street Map: Metropolitan Council, MetroGIS, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS



Source: ESRI, USGS, Northern States Power Company, Burns & McDonnell Engineering Company
 Issued: 5/30/2025

Blue Lake Energy Storage System
 Figure 1
 Site Location
 City of Shakopee, MN



Service Layer Credits: NAIP Imagery: Source: Esri, USDA FSA Hybrid Reference Layer (US Edition): Esri Community Maps Contributors, Metropolitan Council, MetroGIS, Three Rivers Park District, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, World Imagery (Firefly): Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Project Site	Proposed Access Roads	Proposed Preliminary Development Area
Proposed BESS Container	Proposed Laydown Yard	Existing Transmission Lines
Proposed Future Augmentation Block	Proposed Project Substation	Major Roadways
Proposed Project Gate	Proposed Retention Pond	Railroads
Proposed Fence Line	Proposed Screening	



Blue Lake Energy Storage System
Figure 2
Project Facilities
City of Shakopee, MN

Source: ESRI, USGS, USDoD, Northern States Power Company, Burns & McDonnell Engineering Company Issued: 6/11/2025

1.2 Purpose and Need

In 2024, Xcel Energy submitted its 2024-2040 Upper Midwest Integrated Resource Plan (“IRP”).² The IRP set out Xcel Energy’s plan for meeting its customers’ needs for electricity for the next 15 years.

In October 2024, the Company entered into a comprehensive settlement agreement (“Settlement Agreement”) with other settling parties to resolve issues related to both the IRP and a Firm Dispatchable resource acquisition docket.³ After rounds of comments, the Commission met on February 18 and 20, 2025 to consider the Firm Dispatchable Docket, the IRP, and the Settlement Agreement. On April 21, 2025, the Commission issued its ORDER APPROVING SETTLEMENT AGREEMENT WITH MODIFICATIONS, in which the Commission approved the five-year action plan.⁴ In accordance with the Commission’s Order, Xcel Energy intends to add approximately 600 MW of standalone ESS, along with other resource additions, by 2030.

On June 28, 2024, Xcel Energy issued a Request for Proposals (“RFP”) seeking 1,600 MW of wind, solar, storage, and hybrid resources with CODs through 2029.⁵ The Project was included in the Company’s self-build proposal submitted on September 17, 2024. On January 10, 2025, the Company completed the traditional bid evaluation process and notified bidders of our shortlist decisions; the shortlisted projects from the traditional bid track (those that are not proposing to connect to the Minnesota Energy Connection) are in the final negotiation phase.⁶ While the Company intends to file a

² Xcel Energy, Minnesota Public Utilities Commission. February 1, 2024. 2024-2040 UPPER MIDWEST INTEGRATED RESOURCE PLAN. DOCKET NO. E002/RP-24-67.

³ See IN THE MATTER OF NORTHERN STATES POWER COMPANY D/B/A XCEL ENERGY’S 2024-2040 INTEGRATED RESOURCE PLAN AND IN THE MATTER OF XCEL ENERGY’S COMPETITIVE RESOURCE ACQUISITION PROCESS FOR UP TO 800 MEGAWATTS OF FIRM DISPATCHABLE GENERATION, Docket Nos. E002/RP-24-67 and E002/CN-23-212, Joint Settlement Agreement (Oct. 3, 2024).

⁴ IN THE MATTER OF NORTHERN STATES POWER COMPANY D/B/A XCEL ENERGY’S 2024-2040 INTEGRATED RESOURCE PLAN and IN THE MATTER OF XCEL ENERGY’S COMPETITIVE RESOURCE ACQUISITION PROCESS FOR UP TO 800 MEGAWATTS OF FIRM DISPATCHABLE GENERATION, Docket Nos. E002/RP-24-67 and E002/CN-23-212, Order Approving Settlement Agreement with Modifications (Apr. 21, 2025).

⁵ Docket No. E002/M-24-230.

⁶ Bidders with projects connecting to the MNEC have an opportunity to reprice their bids based on the final MNEC route verbally approved by the Commission on April 10, 2025 in Docket Nos. E002/CN-22-131 and E002/TL-22-132. Written Order issued June 10, 2025.

petition for approval of the projects selected in the RFP in third quarter 2025, we are pursuing the Project site permit now to maintain the Project schedule.

The Project is intended to help the Company meet the need for approximately 600 MW of additional ESS capacity by 2030 and accommodate dispatchable resource needs. The primary value to the overall Xcel Energy system is that short-duration ESS will enable renewable integration, providing grid support, deferring some, but not all, traditional grid investments, and improving power quality.

The Project will provide up to 135.5 MW of charging (consuming power from the grid) and discharging (generating power onto the grid) capacity for up to four hours of reliable, deliverable on-peak energy. By way of example, the Project has the potential to store enough energy to provide electricity for approximately 90,000 households for up to four hours based on the average household's annual electricity consumption. The Project is being developed, designed, and permitted to meet or exceed applicable state and local design and operating requirements and be consistent with current industry best practices.

Battery storage facilities such as the Project allow for storage of excess electricity generated by other power producers during periods of low electricity demand, with the ability to send the electricity back to the grid when demand increases. Beyond achieving the goals of the IRP, the proposed Project aims to support Minnesota's transition to a carbon-free electricity supply by enabling wind and solar projects to continue generating clean energy instead of being curtailed due to low demand. For instance, strong overnight winds often lead to high wind turbine output across the state. However, when this generation exceeds demand, the grid operator may curtail wind energy to maintain grid stability. By charging an ESS, the Project and others like it can store excess energy during these periods and discharge it during times of higher demand, such as daytime or evening hours, helping to supplement existing generation and potentially reducing reliance on traditional thermal sources like natural gas.

Beyond its energy-shifting capabilities, the Project will provide essential ancillary and reliability services necessary for the safe and stable operation of the grid. Utilizing current technology for battery, inverter, and energy flow, the Project will support the grid operator in maintaining voltage and frequency stability. Since electricity demand and generation fluctuate constantly (such as when an air conditioner turns on, increasing load, or when a cloud passes over a solar farm, reducing generation), the grid operator must continuously adjust power output to keep the frequency as close to 60.00 Hz as possible. Significant deviations from this frequency can require drastic measures like load-shedding, where large numbers of customers are temporarily disconnected to prevent infrastructure damage and maintain system reliability. Currently, this real-time frequency regulation is primarily managed by ramping natural gas generators up and

down, similar to adjusting a car's accelerator. However, the Project's ESS can perform this function more efficiently, responding instantly, potentially lowering costs, and reducing the reliance on natural gas and other fossil fuels.

The impact to the grid from the integration of an ESS will be positive, including:

- **Supports integration of renewable energy:** The integration of ESS enables higher and more efficient use of existing and new renewable energy sources.
- **Frequency response and regulation:** Strong ESS infrastructure provides moment-to-moment stability for the electrical system more efficiently than existing natural gas resources.
- **Reduce energy waste:** ESS stores energy when there is an excess supply and discharges that energy back onto the grid when supply is low.
- **Grid Resiliency:** ESS can support recovery from storms and other grid emergencies by more efficiently using the operating portions of the grid and providing the grid operator and utility additional flexibility while they work to restore the system.

The Project will bring economic benefits to the local community through investments in construction and ongoing property and business tax revenue, all while requiring minimal public infrastructure for operations.

The Project anticipates delivering cost-effective energy storage to Minnesota and the regional grid by providing energy, capacity, and ancillary services to the grid. Customer benefits come indirectly through improved grid stability and efficiency. By storing excess energy during periods of surplus and releasing it during peak demand, the Project also helps offset the need for additional peak-generation capacity.

Unlike many renewable projects, which typically sell all generated energy to one or more offtaker(s) in the form of a long-term power purchase agreement, this Project will be a Company-owned resource and utilized as part of the Company's overall energy supply operations.

Company Information

The following provides information concerning the Company, Permittee, and ownership of the Project.

1.2.1 Permittee and Contact Information

The permittee for the Site Permit will be:

Northern States Power Company, a Minnesota corporation
Xcel Energy
414 Nicollet Mall
Minneapolis, Minnesota 55401
(612) 330-5500

The Company official responsible for this filing is:

Jody Londo
Director, Regulatory Policy & Strategic Analysis
401 Nicollet Mall
Minneapolis, MN 55401
Telephone: (612) 216-7954
Email: Jody.L.Londo@xcelenergy.com

1.2.2 Applicant Information

Xcel Energy is a public utility that generates electrical power and transmits, distributes, and sells it to residential and business customers that are part of the NSP System within service territories assigned by state regulators in parts of Minnesota, Wisconsin, South Dakota, North Dakota, and the upper peninsula of Michigan.⁷

The Company and its Northern States Power Company Wisconsin affiliate own and operate multiple electric generation facilities serving this area using a variety of technologies and fuels, including coal, natural gas, wind, solar, hydro, refuse derived fuel, and nuclear. Additional wind, solar, landfill gas, biomass, ESS, and hydropower are also included in Xcel Energy's generation portfolio through purchased power agreements.

⁷ The service territories in Wisconsin and the upper peninsula of Michigan are part of the Company's operating company affiliate, Northern States Power Company, a Wisconsin corporation (NSPW).

1.2.3 Statement of Ownership

The Company will develop, own, operate, and maintain the Project. The Company has secured all necessary land rights for construction and operation of the proposed Project.

1.3 Project Schedule

Xcel Energy anticipates receiving Commission approval of the Site Permit for the Project in the first quarter of 2026. Construction is currently anticipated to begin in the second quarter of 2026, with COD currently anticipated by the second quarter of 2027. To meet the anticipated COD, the following schedules are anticipated for the various phases of Project development. The schedule provided assumes Midcontinent Independent System Operator (“MISO”) interconnection study completion according to dates posted by MISO. Delays to the MISO schedule may result in delays to the overall Project schedule.

Land Rights: The Company has secured land rights via ownership of the underlying lands in the City of Shakopee. The Company is also the owner of the Blue Lake Substation and adjacent Blue Lake Peaking Plant. No leases or use of other lands are anticipated at the time of this Application submittal.

Site Permit: The Company anticipates that the Site Permit for the Project will be issued by the Commission in the first quarter of 2026.

Other Permits: The Company is responsible for obtaining permits and approvals necessary for construction and operation of the Project (see **Section 1.4**). The Company is working with applicable regulatory staff and anticipates pertinent permits/approvals to be issued by the first quarter of 2026, prior to the start of construction.

Equipment Purchase: The Company anticipates procuring Project equipment starting in 2025 and continuing through 2026. Final equipment and contractor selections will be made contingent on the Site Permit issued by the Commission.

Construction: The Company will oversee the primary contractors performing construction of the Project. These construction activities will include site preparation; grading; and access road, energy storage and associated equipment modules, substation, electrical cabling, transmission, and communications equipment installation work. Construction is anticipated to occur between the second quarter of 2026 to the second quarter of 2027. The Company anticipates beginning construction of the Project after obtaining a Site Permit from the Commission, fulfilling necessary Site Permit pre-construction compliance requirements, securing other required approvals, and securing an interconnection agreement for the Project.

Testing and Commissioning: Testing and commissioning will occur at the end of construction and prior to the COD. This is currently anticipated to occur in the first and second quarters of 2027.

Operation: As indicated above, the COD of the Project is anticipated to occur in the second quarter of 2027, after construction and testing/commissioning activities are completed.

Decommissioning: The Company will determine at the end of the Project’s operational life whether it will take necessary steps to continue the operation of the Project (such as re-permitting, retrofitting, or augmentation) or will decommission the Project. Should the Company choose to decommission, the anticipated start of the decommissioning process will be approximately 20 years following COD.

See **Sections 2.0, 3.0, 4.0,** and **Table 1.3** below for more project schedule details.

Table 1.3: Milestone Schedule

Milestone	Estimated Date
Commence Commission permitting proceedings	Q2 2025
Commission permit(s) issued	Q1 2026
Start of construction	Q2 2026
Commercial operation date	Q2 2027

1.4 Required Project Permits

Development of the proposed Project will likely require several federal, state, and local permit approvals prior to starting construction. Potential permits, with respect to their prospective applicability and expected timing, are detailed in **Section 1.4.2** below (**Table 1.4**).

1.4.1 Minnesota Public Utilities Commission Site Permit

The Project will be considered an ESS by the Commission. As defined by Minn. Stat. § 216E.01, subd. 3a, an ESS means “equipment and associated facilities designed with a nameplate capacity of 10,000 kilowatts or more that is capable of storing generated electricity for a period of time and delivering the electricity for use after storage.”

A Site Permit is required for an ESS. Pursuant to Minn. Stat. § 216E.04, subd. 2(9), the Company seeks approval of its Application under the alternative review process provided under Minn. Stat. § 216E.04 and Minn. R. 7850.2800 to 7850.3900. The

Company filed a Notice of Intent to Submit a Site Permit Application under the Alternative Permitting Process to the Commission on May 22, 2025.⁸ The Site Permit Completeness Checklist is provided in **Appendix B**. See **Section 1.4** for additional information.

1.4.2 Potential Permits and Approvals

Development and construction of the Project will likely require several federal, state, and local permit approvals prior to construction. Xcel Energy will obtain all permits, licenses, and approvals that are required for the Project concurrent with or following issuance of the Site Permit. Potential permits and approvals, with respect to their prospective applicability and expected timing, are included in **Table 1.4** below.

Please note that the gen-tie is over 100-kV, but less than 1,500 feet in length, and therefore does not require a Route Permit from the Commission. Xcel Energy coordinated with the City of Shakopee to determine if there were applicable local approvals required for the gen-tie. On June 4, 2025, the City of Shakopee responded and confirmed that no local approvals are required. A copy of the correspondence from the City of Shakopee is provided in **Appendix C**. Accordingly, the gen-tie is considered an associated facility in this Application.

Table 1.4: Potential Permits and Approvals

Agency	Permit / Approval	Applicability / Purpose	Permit Status and Timing
Federal			
U.S. Environmental Protection Agency (“EPA”)	Spill Prevention, Control, and Countermeasure (“SPCC”) Plan	An SPCC Plan will be required for Project facilities with above ground oil storage exceeding 1,320 gallons.	To be written prior to construction and operation.
U.S. Fish & Wildlife Service (“USFWS”), Ecological Services	Section 7 Endangered Species Act (“ESA”), Threatened and Endangered Species Consultation and Clearance	Clearance for ESA species.	USFWS Consultation ongoing. The Project does not anticipate adverse impacts to federally protected species.

⁸ Xcel Energy, Minnesota Public Utilities Commission. May 22, 2025. Notice of Intent for Alternative Review. Docket Nos. E002/ESS-25-214, E002/M-24-230

	Migratory Bird Treaty Act (“MBTA”) Compliance	Clearance for MBTA species.	USFWS Consultation ongoing. The Project does not anticipate adverse impacts to federally protected species.
	Bald and Golden Eagle Protection Act (“BGEPA”) Compliance	Clearance for BGEPA species.	USFWS Consultation ongoing. The Project does not anticipate adverse impacts to federally protected species.
State			
MPUC	Site Permit	Site Permit is required for construction and operation of an ESS and associated facilities.	To be obtained.
Minnesota Pollution Control Agency (“MPCA”)	Authorization to Discharge Stormwater Associated with Construction Activity Under the National Pollution Discharge Elimination System (“NPDES”)/State Disposal System Program, MNR100001 and Stormwater Pollution Prevention Plan (“SWPPP”)	An NPDES permit will be required for construction activity that disturbs one or more acres of land.	To be obtained/prepared prior to construction.
Minnesota Department of Labor and Industry	Request for Electrical Inspection	Required to ensure proposed Project is following state electrical codes.	Inspection to be conducted during construction and prior to operation.
Minnesota State Historic Preservation Office (“SHPO”)	Cultural and Historic Resources Review; State and National Register of Historic Sites Review	This review is required for projects that require state permits or affect state registered properties, or that require Section 106 compliance. Consultation necessary to support Site Permit.	Concurrence will be obtained via Phase I Inventory prior to construction.
Minnesota Department of Natural Resources (“MnDNR”)	State Threatened and Endangered Species Review	Review of impacts to state listed rare species conducted as a part of Project due diligence and support of Site Permit.	Concurrence will be obtained via Natural Heritage Information System (“NHIS”) Clearance and MnDNR

			consultation prior to construction.
Minnesota Department of Transportation (“MnDOT”)	Oversize/Overweight Permit(s)	Use of vehicles meeting or exceeding: overall loaded width exceeds 8’6”, height 13’6”; combination vehicle length exceeds 75’0”; single vehicle length exceeds 45’0”; gross vehicle weight exceeds 80,000 pounds.	To be obtained prior to material transport.
Local (County, City, Watershed District)			
Scott County	Annual Moving Permit	Required for loads on country roads when: overall loaded width: 14.5 feet, height: 14 feet, and/or length: 95 feet.	To be obtained prior to material transport.
City of Shakopee	Road improvement	Potentially required for road widening, adjustments to road profile depth, intersection modifications, additional aggregate, or driveway enhancements.	To be determined and obtained as applicable prior to construction.
Lower Minnesota River Watershed District	Rule B: Erosion and Sediment Control	Required for land disturbing activities in excess of one acre.	To be obtained/prepared prior to construction.
	Rule D: Stormwater Management	Required for land disturbing activities in excess of one acre.	To be obtained/prepared prior to construction.

1.5 Certificate of Need Not Required

Under Minn. Stat. § 216B.243, subd. 8(9), a certificate of need is not required for energy storage systems.

2. GENERAL INFORMATION

The following sections describe the proposed Project site and Project, including land control, preliminary Project design, interconnection, equipment selections, prohibited areas, alternatives, and costs.

2.1 Overall Project Description

The Project is an energy storage system designed to support the existing electrical grid. Rather than generating electricity, it functions as an auxiliary system that enhances grid efficiency. The ESS stores surplus energy during periods of excess production and discharges it when demand is high. This process helps maintain grid stability by balancing energy supply, leveling loads, and stabilizing frequency fluctuations.

The Project will also have the capability to stabilize the local transmission grid, including voltage regulation (helping the local grid maintain its design voltage) and frequency regulation (helping to maintain a steady 60 hertz). The final design is expected to occupy approximately 11.9 acres of the site with the remaining acres remaining under current land use conditions (predominantly barren land) or planted with perennial vegetation. Xcel Energy intends to utilize an existing 4.1-acre laydown yard adjacent to the Blue Lake Peaking Plant, currently being used by the Company for staging of equipment associated with repowering of the Blue Lake Peaking Plant as shown in **Figure 2**. This existing laydown yard will be returned to prior land use conditions or perennial vegetation following construction of the Project.

The Company plans to construct the Project on a schedule with COD by the second quarter of 2027. To accommodate design optimization, equipment selection, and unforeseen findings during the permitting process, the impacts outlined in this Application reflect the maximum potential Preliminary Development Area. As a result, the actual impacts from the project's construction and operation are anticipated to be lower than those presented. The Preliminary Development Area and facilities are shown in **Figure 2**.

2.2 Project Location

The Project is located in the eastern portion of the City of Shakopee, Minnesota, immediately north of US-169 and south of County Road 101 (Highway 101). The Project is in Sections 2 and 11 of Township 115N, Range 22W and shown in **Figure 1**.

The Company believes that the selected Project location in Shakopee is feasible and prudent for ESS development based upon the immediate proximity to existing electric

transmission infrastructure, minimal impact to natural resources, and consistency with adjacent land uses.

2.3 Facility and Interconnection Description

2.3.1 Facility

To demonstrate Project viability, this Application provides typical assumptions about Project facilities and associated equipment. Details of Project facilities and equipment specifications will be finalized during procurement. As further detailed in **Section 4.0** (Engineering and Operational Design), Project facilities and equipment are expected to include:

- Lithium Iron Phosphate battery cells pre-installed in a non-occupiable Sungrow container. This container bulkhead is constructed of fire resistant material;
- Multilevel battery management system and telemetry devices;
- Power Conversion Systems (“PCS”), which consists of integrated bidirectional string inverters;
- Medium Voltage Transformer (“MVT”) skids;
- Fire suppression system, including but not limited to automated ventilation, deflagration panels and container level mini fire alarm control panels;
- Various detection equipment including smoke, heat and flammable gas detectors;
- Switchgear and/or switchboards;
- Electrical and communications wiring;
- Electrical feeder lines;
- Security fencing, gates and cameras;
- Access roads;
- Stormwater collection basin;
- Supervisory Control and Data Acquisition (“SCADA”) system;
- Substation;
- Overhead 115 kV gen-tie (less than 500 feet in length);
- Metering equipment; and
- Ancillary equipment, as necessary.

Project facilities and related equipment are shown in **Figure 2**.

2.3.2 ESS Facilities and Gen-Tie Description

The Project is designed to connect to the adjoining Xcel Energy Blue Lake Substation through a series of Project facilities, including: the gen-tie, Project substation, transformers, inverters, and battery storage modules within equipment units. All Project electrical facilities are bi-directional. Energy flow between the Project and the Blue Lake Substation will be based on real-time regional energy demand and grid conditions.

The transfer of electrical energy to and from the grid and the batteries includes several steps. The Project plans to connect to the existing Blue Lake Substation via gen-tie with a single turning structure with a span from the Project substation and span to the Blue Lake Substation, with a combined span distance of less than 500-feet. The gen-tie will connect to switches and protection devices to a high-voltage power transformer that transforms the voltage from 115 kV to 34.5 kV and from 34.5 kV to 115 kV, depending on the travel direction of the flow of electricity. Additional breakers, switches, and cables connect the high-voltage power transformers to the PCS, which may include medium-voltage transformers and pad mount inverters, depending on final equipment selection, unless the battery technology chosen includes string inverters within the battery ESS units and standalone transformers. The 34.5 kV feeder lines connect the PCS to convert the power from medium-voltage alternate current (“AC”) to direct current (“DC”) electricity. The energy is then stored in battery modules on racking systems within the ESS units.

As an example, when power is collected from the grid and stored in the Project batteries, electricity will flow from the Blue Lake Substation, through the gen-tie to the bi-directional 115 kV power transformer housed at the Project substation, where the power is stepped down from 115 kV to 34.5 kV, and then to the PCS within the ESS facilities. The stepped-down power is then transformed from AC to DC energy via the inverters and stored in the batteries until released back to the grid. When grid energy demand occurs, the Project will dispense the stored energy in a reverse manner. Electricity flows from the battery modules in the ESS units and is converted from DC to AC energy via the same inverters. The AC energy will flow from the inverters through the medium-voltage transformers, then through 34.5 kV feeder lines and back to the bi-directional 34.5 kV power transformer and to the Blue Lake Substation. The transformers at the Project substation step up the energy to 115 kV to be delivered to the Blue Lake Substation through the gen-tie. At that point, energy flows on the grid to electricity users’ loads.

The anticipated connection and layout of the described Project infrastructure is shown in **Figure 2**. The typical flow of an ESS facility is shown below in **Figure 3**.

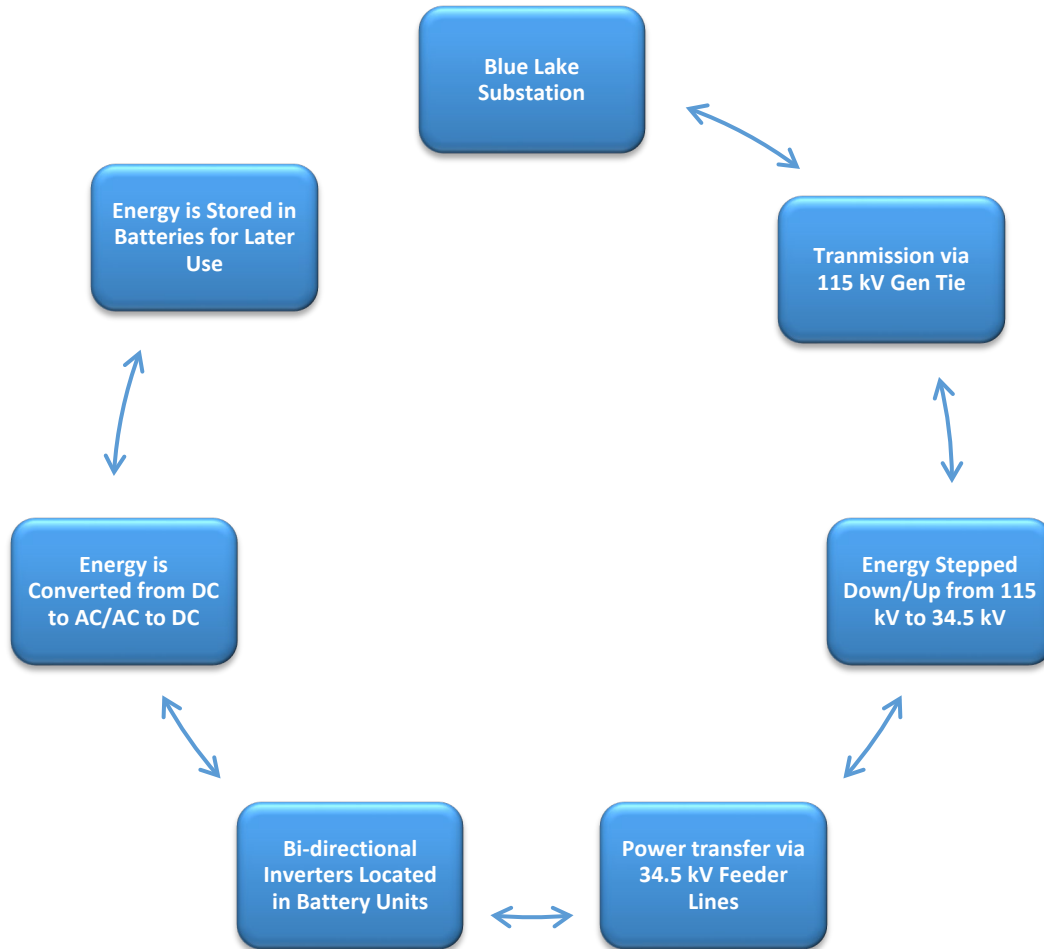


Figure 3: Bi-directional Flow of a Typical ESS Facility

The Company filed a Generator Interconnection Agreement (“GIA”) application with MISO for up to 135.5 MW. MISO is an independent, not-for-profit organization that operates the electric transmission system in a large portion of the central United States and a section of Canada, including Minnesota. Approval from MISO through a GIA is required to connect the Project to the electrical transmission system. The Company submitted the replacement interconnect request with MISO in May 2024 under Project R1050. This request is to replace the existing Blue Lake units 1, 2 and 4. The Company expects to sign a GIA in the second quarter of 2025.

2.4 Size and Capacity

The Project is proposed within an approximately 70-acre Project site on land under the ownership of the Company (see **Map 2**). The Company estimates that approximately 7.8 acres of the Project site are necessary to accommodate the final design and engineering of the proposed Project, but additional acres may be utilized in the final

design for a combination of permanent and temporary construction facilities, with a portion of these temporary areas being returned to natural condition or other use following the completion of construction. The Preliminary Development Area includes the gravel pad containing Project infrastructure in addition to one stormwater management pond, proposed grading areas, access road connections, and parking and storage areas external to the fence line. The ESS pad will be class-IV or similar.

The Project will utilize lithium-ion or similar battery technology to provide up to 135.5 MWac to the electrical grid for up to four continuous hours as measured at the Point of Interconnection (“POI”). This preliminary design and Project layout take into account applicable energy loss (approximately 10% losses at the start of operation) and would allow for a maximum of 135.5 MWac of energy storage and transmission onto the grid. An interconnection request for 135.5 MW has been submitted to MISO, and all assumptions about development and construction activities are contingent on signing a GIA prior to construction of the Project. Accordingly, the Company is requesting a Site Permit for the Project with sufficient capacity to deliver up to 135.5 MW as measured at the POI. The current layout and proposed equipment are preliminary and subject to change as the design advances.

2.5 Cost Analysis

Estimated Project costs are provided in **NON-PUBLIC Appendix K**.

3. PROJECT SITE SELECTION AND CONSTRAINTS ANALYSIS

The Company conducted a detailed analysis of several areas to identify the proposed POI location and site location for development. Site search and selection were based on several factors described in further detail in the following sections. Xcel Energy identified feasible sites with open space where substations and transmission lines have capacity for the Project to connect and supply energy and then further narrowed the search to locations on land currently under Xcel Energy ownership. The Company identified the area adjacent to the Blue Lake Peaking Plant and Blue Lake Substation as having available capacity, streamlined interconnection process and low interconnection costs due to the ability to reuse the existing interconnection rights of Blue Lake Peaking Units 1, 2, and 4, and existing land ownership by the Company.

The Blue Lake Peaking Plant is designed to provide additional power to the grid when demand for electricity exceeds the capability of lower-cost baseload plants, such as the coal-fired Sherco plant and the Monticello and Prairie Island nuclear plants. Generally, transmission capacity is available in this area. The Company then screened available land within the area of the proposed POI to reduce the financial burden of constructing a longer transmission line (i.e., construction cost, easement acquisition cost, and electrical losses). Lands within the area of the POI were determined potentially suitable if they were: undeveloped, not currently encumbered by other easements (e.g., pipelines), and contained minimal wetlands, streams, transmission lines, pipelines, roads, or other obstacles that would limit the buildable acres or lead to irregularly shaped development areas. The Company also screened areas for geotechnical risks, habitat for endangered species, proximity to culturally sensitive areas, other potential environmental risks such as pollutants, steep slopes, flood zones, and current land use conflicts.

Following this screening, the site was chosen for its proximity to the POI, Xcel Energy land ownership in proximity to an existing peaking plant, minimal environmental constraints, and limited competition with other potential renewable energy storage projects or future land uses.

3.1 Prohibited and Exclusion Sites

Minn. R. 7850.4400, subp. 1, prohibits the placement of energy facilities in certain locations, including: national parks; national historic sites and landmarks; national historic districts; national wildlife refuges; national monuments; national wild, scenic, and recreational riverways; state wild, scenic, and recreational rivers and their land use districts; state parks; nature conservancy preserves; state scientific and natural areas

(“SNAs”); and state and national wilderness areas. Accordingly, none of these prohibited sites are located within or near the Project site as discussed below.⁹

In addition, Minn. R. 7850.4400, subp. 3, prohibits the placement of energy facilities in certain exclusion areas unless there is no feasible and prudent alternative. These exclusion areas include: state registered historic sites; state historic districts; state Wildlife Management Areas (“WMAs”); county parks; metropolitan parks; designated state and federal recreational trails; designated trout streams; and state water trails. None of these exclusion sites are located within the Project site as further discussed below.⁹

Although pursuant to Laws of Minnesota 2023, chapter 60, article 12, section 67, the Project is not subject to Minn. R. 7850.4400, subp. 4 (prime farmland exclusion), the approximate 70-acre site proposed for the 135.5 MW Project does not exceed the 0.5 acre per MW use of prime farmland identified the Rule and no prime farmland is present in the Project site or Project Development Area.¹⁰

3.1.1 Factors Driving Choice of Region

The region of Minnesota in which the Project is located was selected after searching for regions in Minnesota that were suitable for an energy storage facility to further the Company, state, and national goals of supplying reliable energy to the grid. Based on several factors, including renewable energy projects in the region, environmental constraints, land availability, proximity the existing transmission interconnection, and costs, the Company identified an urban region of the state for further exploration to develop an energy storage project.

The Project requires sufficient acreage to host facilities that are conducive to development with respect to the energy resources, topography, interconnection, and environmental constraints. The Project will be located on land that is not expected to limit or constrain the development of an ESS and related infrastructure. These factors are described below and are specific to the Project.

⁹ Natural Resources Research Institute. 2025. Minnesota Natural Resource Atlas. (available from: <https://mnatlas.org/gis-tool/>). Accessed April 2025.

¹⁰ U.S. Department of Agriculture, National Resources Conservation Service. 2025. Soil Survey Geographic Database (SSURGO). (available from: <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>). Accessed April 2025.

3.1.2 Mitigations and Offsetting Benefits

In addition to the minimization measures described throughout this Application, the Project includes mitigation measures for visual impacts, including existing vegetative screening and topography. This is described further in **Section 5.2.1**.

Vegetation Management

A Preliminary Vegetation Management Plan (“VMP”) has been prepared and can be found in **Appendix D**. Based on the Project’s size and configuration, landscaping will generally include five elements:

- Rock surfacing within the fenced area and a five-foot area outside the fence with weed barriers and/or herbicidal vegetation management used in these hardscaped areas;
- Gravel surfaced access roads and parking areas;
- Perennial plantings typified by low-growing grasses to ensure soil stabilization;
- Tree plantings for screening and mitigation purposes; and
- Stormwater basin(s).

3.2 Alternatives Considered but Rejected

In accordance with Minn. Stat. § 216E.04, subd. 2(9), the Project qualifies for the alternative review process under Minn. R. 7850.2800 to 7850.3900 because it is an ESS. As such, pursuant to Minn. R. 7850.3100, the Company is not required to analyze alternative sites unless it considered and rejected alternative sites. The Project location was selected due to minimal environmental impacts, proximity to the electrical grid and existing transmission infrastructure, existing land ownership, and available capacity on the grid to which the Project will interconnect. No other sites were considered for this Project.

3.3 Future Project Expansion

The Company has no anticipated plans to expand the proposed Project footprint beyond the current Project site. As noted above, the Project site is approximately 70 acres of Company-owned land. Additionally, the Company has made an interconnection request from MISO for up to 135.5 MWac, which is the planned Project energy output at the POI. The Project has been designed to specifically address current and predicted future electricity needs for its service area, including augmentation areas. Therefore, no expansion of the Project is anticipated beyond the planned augmentation efforts.

ESS augmentation is a critical process for maintaining and enhancing the performance of energy storage systems over their lifespan. As batteries degrade over time, their capacity and efficiency decrease, necessitating augmentation to ensure continued optimal operation. This process involves adding new battery modules or upgrading existing ones to restore the system's energy capacity. There are two primary strategies for ESS augmentation: initial overbuild and designed augmentation. Initial overbuild involves installing extra battery capacity at the start of a project to account for future degradation, while designed augmentation plans for periodic additions of battery capacity throughout the system's life. Augmentation can be performed using either AC or DC methods, with AC augmentation adding new batteries after the inverter, making it modular and flexible, and DC augmentation integrating new batteries before the inverter, which is more cost-effective and space-saving. This process is essential for maximizing the efficiency and revenue-generating potential of ESS installations. The Project intends to perform designed augmentation in the future as initial batteries degrade with time.

Should the Company seek to expand the Project in the future, the Company may upgrade the ESS technology to increase nameplate capacity or may expand the Project outside of the fenced area. The Company would seek necessary permits required for any expansion of the Project.

3.3.1 Setbacks

As described above, the Project is considered an ESS, as defined by Minn. Stat. § 216E.01, subd. 3a and is permitted by the Commission under Minn. Stat. § 216E.04 and Minn. R. 7850.2800 to 7850.3900. To date, the Commission has not issued a site permit for a standalone ESS; however, several are currently under consideration at the time of this Application submittal. Accordingly, no precedent has been established at the State level relating to setbacks for the Project. In designing the preliminary Project layout, the Company reviewed applicable setbacks and related requirements. While applicable rules and regulations for siting the Project do not require projects to meet local ordinances, the Company has attempted to comply with City of Shakopee and Scott County setbacks and applicable ordinances.

Neither the Scott County Zoning Ordinance nor the City of Shakopee Zoning Ordinance has specific ESS requirements. The Project site predominantly consists of barren land and is zoned in the Light Industry (“I-1”) Zoning District according to the

City of Shakopee Zoning Map.¹¹ As energy storage systems are not specifically contemplated in either ordinance, the general setbacks for the zoning district were reviewed.

City of Shakopee setback regulations and distances for the I-1 Zoning District are included in **Table 3.3** As indicated in **Table 3.3** below, the preliminary Project design setbacks meet or exceed the City of Shakopee setback requirements applicable to the I-1 Zoning District.

Table 3.3: City of Shakopee Setbacks Applied

Setback Type	City Setback Distance (feet)	Preliminary Project Design Setback from Fence (feet)
Front Yard	30	250
Side Yard	15	425
Rear Yard	30	305

¹¹ City of Shakopee. 2019. Zoning Map. (available from: <https://www.shakopeemn.gov/home/showpublisheddocument/4646/637085411392700000>). Accessed April 2025.

4. ENGINEERING AND OPERATIONAL DESIGN

The following sections describe current assumptions on viable preliminary Project design, facility equipment, balance of plant components, security fencing, and access to the Project. Facility layout and equipment will be finalized prior to construction. The preliminary Project design is shown in **Figure 2**.

4.1 Design

The main components of the Project include ESS units (battery units, MVT skids, electrical systems, and a PCS with inverters), Project substation, a gen-tie, interconnection switching and protection for the Blue Lake Substation, fencing, and access roads. All primary components are bi-directional and operate based on the energy flow to and from the ESS. At the time of this Application, the specific equipment and technology have not been determined, as they will depend on market conditions and equipment availability during construction. The assumptions in this Application are primarily based on lithium-ion and standard industry battery systems to represent a likely development scenario. The Project's preliminary design allows for flexibility in technology selection and includes sufficient space for essential equipment and supporting infrastructure, such as future augmentation, equipment storage, stormwater management, and parking.

4.1.1 ESS Facilities

An ESS can help balance the delivery of power generated by electric generation sources by charging from the electrical grid when demand is low and distributing electricity back into the grid during outages or when demand is high, as described in detail in **Section 2.0**.

Battery storage technology is evolving rapidly. By the time the Company begins procuring infrastructure, the available options may be significantly more advanced or more diverse than those currently on the market. To ensure the best selection, the Company will evaluate the latest market offerings during final engineering to determine the most suitable battery system model. However, the Project is being designed to accommodate the Sungrow Power Titan 2.0 technology. Specifically, the current equipment planned for this project includes Sungrow's ST5015UX-4H-US and MVS5140-LS-US units. This equipment has been technically and commercially evaluated through an extensive RFP process and utilized for other Company ESS projects.

The preliminary design for the ESS incorporates a modular layout utilizing the manufacturer's recommended spacing requirements for Sungrow's ST5015UX-4H-US

and MVS5140-LS-US equipment. The location of the ESS area is currently planned on approximately 2.2 acres within the 5.2 acre fenced area in the Project site. Each ESS unit is an all-in-one 20-foot container with battery cells, string inverters, liquid cooled thermal management system, integrated battery management system, Fire Suppression System equipment, systems controllers, installed within a weatherproof unit and other auxiliary devices (**Figure 4**). These units do not allow internal ingress for safety reasons as described in **Section 5.2.5** below.

The ESS will include inverters and medium voltage transformers to transfer the energy to and from the batteries. Each ESS unit will be connected to pad-mounted switchgear, step up/down transformer(s), and a power distribution system via 34.5 kV underground cables. Stabilized gravel will cover the entire surface area within and up to five feet beyond the perimeter fencing.



Figure 4: Representative ESS Units

The ESS industry primarily utilizes two types of lithium-ion battery cell chemistries: NMC and LFP. The Company plans to use LFP for the Project, in part due to its enhanced safety profile compared to NMC. LFP batteries are more stable and have a lower risk of thermal runaway, a condition where a battery cell's internal temperature rises beyond its design threshold, triggering a cascading chemical reaction that generates additional heat. This process can lead to the breakdown of internal separators within the battery cell, causing further reactions and, in extreme cases, fire in nearby combustible components. However, because LFP cells contain less reactive materials, the likelihood of thermal runaway occurring or spreading is significantly lower compared to NMC and other lithium-ion chemistries. Potential hazards and safety considerations are discussed in more detail in **Section 5.2.5** below.

Over the lifespan of the Project, the batteries will experience some capacity loss. Under current MISO rules, an ESS receives accredited capacity based in part on its ability to sustain its claimed energy output for at least four continuous hours each day. To maintain the facility's rated capacity, the ESS will undergo augmentation by adding additional supplemental battery units (also discussed in **Section 3.3**). The augmentation schedule will be determined during the design phase, following final equipment selection, and will be based on projected battery degradation. The Company has designed the site to accommodate future augmentation units within the fenced area, with installation timing dependent on capacity monitoring during operations. The planned augmentation units (six total units) are incorporated into the Project's design, as shown in **Figure 2**. As a result, the initial construction of the ESS Facility will not include all 38 ESS units depicted in **Figure 2**; up to six augmentation units will be added as needed throughout the Project's lifecycle. The Company respectfully requests that the Site Permit explicitly allow for the addition of augmentation units, as outlined in the final site plan, without requiring a site permit amendment from the Commission.

Visually, the impact of the ESS would not be out of character with the existing Blue Lake Substation. The modeled units are neutral in color, relatively low in height (approximately 10-12 feet, including foundations), and approximately 20 feet long.

4.1.2 Project Substation and Interconnection

The Project substation is estimated to occupy approximately 1.0 acres of land and have a footprint of approximately 42,100 square feet in the Preliminary Development Area (**Figure 2**). The Project substation will consist of high voltage electrical structures (i.e., pole structures), breakers, a three phase, three-winding 115 kV step-up/step-down bi-directional transformer, metering and related equipment for connecting to the existing Blue Lake Substation immediately adjacent to the Preliminary Development Area, lightning protection, and control equipment according to the specifications of the GIA with MISO and the Company.

The Company will connect the Project to the grid via a new 115 kV gen-tie of less than 500 feet between the Project substation and the Company's Blue Lake Substation. Energy from the grid will be stepped down from the 115 kV interconnection voltage at the bi-directional transformers located at the Project substation and then delivered through underground 34.5 kV feeder lines to the ESS system inverters that will make the electricity available for storage at the battery. When stored energy from the batteries is required, the same inverters will convert the energy to DC and will be transmitted via the underground 34.5 kV feeder lines to the Project substation. The 34.5 kV collector system voltage will then be stepped up to the interconnection voltage of 115 kV by the bi-directional transformers located at the Project substation and transmitted to the Blue Lake Substation via the overhead gen-tie.

The ultimate number of poles and length of the gen-tie are pending final engineering and design. The current preliminary design includes 1 to 2 poles and a gen-tie that is less than 500 feet in length. Typical dead-end structures are made of steel and are 60–90 feet tall (**Figure 5**).

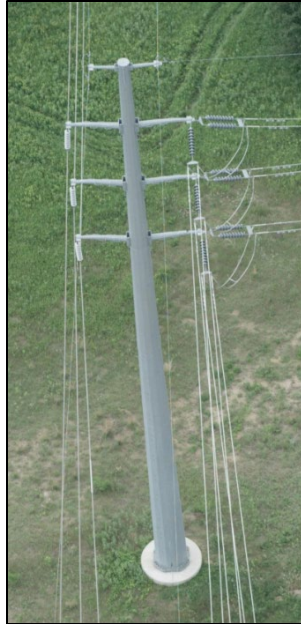


Figure 5: Typical Overhead Transmission Line Structure

The Project substation location will be graded and the ground surface dressed with crushed rock. Secondary containment for the transformer will be installed as necessary. The Project substation will be fenced with a 10-foot-tall anti-climb, galvanized chain-link fence grounded in accordance with applicable Company standards for security and safety purposes. The Project substation fence will be furnished with an 18-inch galvanized sheet metal flashing along the top of the fence and gate to deny climbing animals a toehold. As noted above, the area within the fenced area will be brought to finished grade using crushed rock to provide step-and-touch protection, which also minimizes vegetation growth and reduces fire risk. The Project substation will be secured with a lockable gate and will only be accessible to qualified, trained Project operational personnel or those escorted by such personnel at all times.

4.1.3 Operations and Maintenance Facility

Operations and maintenance (“O&M”) for the Project will utilize the collection substation electrical equipment enclosures building as well as an onsite Connex container, which will be used to store spare parts. These infrastructure components will serve as a base of operation for the on-site technicians, including housing communication infrastructure.

During construction of the Project, Xcel will use an existing laydown yard in the southern portion of the site (**Figure 2**). Upon completion of Project construction, the laydown yard will be regraded and seeded with a native perennial mixture for restoration (see **Appendix D**).

4.1.4 Fencing

Permanent security fencing will be installed along the perimeter of the ESS facility (**Figure 2**) to comply with Company standards. Fencing will consist of a 10-foot-tall anti-climb, galvanized chain-link fence in accordance with applicable electrical code requirements for security and safety purposes. High voltage warning signs and lockable gates will also be installed on the fencing.

4.1.5 Access Roads and Transportation System

Access to the Project is planned to two points on the western site boundary from 70th Street South (**Figure 2**). The final length of the access roads will depend on the equipment selected and final engineering to accommodate access to the existing Magellan valve site. Current plans call for a re-route of the existing access to the north and removal of the inactive pipeline; however, these plans are preliminary and subject to change.

The surface space between the ESS units and the fence will be completely covered by gravel. This will allow vehicle access to the units around the perimeters and between rows, as well as access to the Project substation. These internal spacings/drive lanes will be approximately 20 feet wide during construction and operation. The entry road apron from 70th Street South may be temporarily wider during construction to allow safe turning radii for trucks. The road will narrow to 20 feet as it enters the facility. See **Figure 6** for what a typical access road will look like. The access road may be temporarily wider during construction and then reduced in width for long-term site access upon completion of construction. Entrances will have locked gates.



Figure 6: Typical ESS Access Road

Significant upgrades or modifications to public roads are not expected to be necessary for the construction or operation of the Project. However, the Company will coordinate with City and County staff to ensure compliance with their road standards. If any adjustments are needed along the selected delivery routes, potential upgrades may include, but are not limited to, road widening, adjustments to road profile depth, intersection modifications, additional aggregate, or driveway enhancements.

The Company will obtain relevant permits from road authorities to accommodate construction related activities.

4.2 Project Layout

The final layout of the Project will be designed to maximize electrical storage and efficiency while minimizing impacts on human settlements, the environment, cultural resources, and existing infrastructure. Facility siting will adhere to City and County setback requirements (outlined in **Section 3.3.1**) and comply with applicable local, state, and federal regulations. The preliminary site layout is shown in **Figure 2**.

4.2.1 Preliminary Development Area

Table 4.2 describes the Project facilities' estimated acreages within the approximately 11.9-acre Preliminary Development Area based on the preliminary Project design (**Figure 2**).

Table 4.2: Preliminary Development Area Acreage

Preliminary Development Area ¹²	Acres
Access Roads	1.5
Basin Area	0.6
ESS Foundations (including future augmentation areas)	0.8
Laydown Yard ³	4.1
O&M Facility ⁴	N/A
Project Substation Area	1.0
ESS Area and Substation Area (Fenced Area) Pad	5.2
Area Inside Preliminary Development Area not Housing Infrastructure (including laydown yard)	2.0
Preliminary Development Area Total	11.9
Preliminary Development Area Total Excluding Laydown Yard	7.8
¹ The Preliminary Development Area includes the permanent development area that is hosting ESS equipment, as well as the access roads. The Preliminary Development Area, based on the Project’s preliminary design, includes access roads, buried electrical feeder lines, O&M facility, Project substation, ESS, stormwater basin(s), and a temporary laydown yard. ² All areas within the 70-acre site that lie outside the designated Preliminary Development Area shall remain undisturbed, retaining their existing land use and land cover characteristics. ³ The Laydown Yard is an existing area currently being used by the adjacent Blue Lake Peaking Plant and will be continuously used for the Project. ⁴ O&M Facility space is negligible, as existing space will be used at the Blue Lake Peaking Plant.	

4.3 Construction, Commissioning, Restoration, Operation and Maintenance

A preliminary list of pre-construction, construction, and post-construction activities for the Project typically include:

Pre-construction:

- Geotechnical investigation;
- Underground utility identification and location;
- Initiate soil/vegetation stabilization in areas with no disturbance;
- Design Project substation;
- Design ESS facility;
- Design access roads and electrical systems; and
- Procure necessary facility components (inverters, ESS, and transformers).

Construction:

- Site preparation, grubbing, and grading;
- Maintain perennial vegetation established during preconstruction activities;

- Establish temporary or permanent (seasonally dependent) vegetation in disturbed areas, as practical;
- Construct laydown area preparation and set up temporary job site trailers;
- Construct stormwater basin(s);
- Civil construction of access roads;
- Construct fencing;
- Install below-ground electrical systems including conduit, electrical feeder cables, other electrical cables, and communications cabling;
- Install MVT skids;
- Install ESS units and batteries;
- Construct Project substation; and
- Construct gen-tie.

Post-Construction:

- Restore disturbed areas not intended for permanent above-ground facilities;
- Maintain and restore established vegetation;
- Replace temporary vegetation with perennial vegetation as applicable;
- Conduct training as outlined in Emergency Response Plan (“ERP”) with local first responders;
- Energize, test and commission the facility; and
- Begin commercial operation.

4.3.1 Construction and Construction Management

Construction will commence once the necessary permits are secured and the electrical interconnection process with MISO is complete. The Project will begin with workforce mobilization and initial site preparation, including grading, and vegetation removal. Preliminary engineering analysis suggests that up to approximately 3.5 acres within the Preliminary Development Area will require clearing and subsequent grading. The estimated earthwork for the preliminary scenario would include roughly 35,000 cubic yards of cut and 35,000 cubic yards of fill. Final cut and fill volumes for access roads, stormwater management ponds, the ESS pad, and other project facilities will be determined upon completion of the final site design.

During the initial phase of construction, Xcel Energy or its contractor will implement general site improvements, including upgrades to access roads and preparation of the existing staging/laydown area. This existing temporary staging/laydown area is in the southern portion of the site and will serve as a hub for storing construction materials

and shipped equipment containers, receiving deliveries, and providing temporary parking for Project-related vehicles. Additionally, temporary construction offices will be established on-site for the duration of the construction period.

The installation of the ESS units (battery units, MVT skids, and electrical systems) will follow, along with the development of internal drive lanes. Unlike other on-site access roads, these lanes will not feature a separate road within the fenced area; instead, the entire area will be graveled, allowing traffic to move between the ESS units without a designated road profile. Construction will begin with the removal and segregation of topsoil, which will be stored in a designated location. Site preparation will also include the installation of substructures and electrical equipment.

The installation process will involve driven or helical pile foundations, requiring the use of trenching machines, pile drivers, forklifts, boom trucks, and cranes. It is anticipated that each ESS will have six pile foundations while each MVT skid will have four pile foundations. This will be finalized as civil design progresses. Below-ground medium voltage (34.5 kV) cables will connect the MVT skids to the Project substation. The Project will incorporate individual ESS units, MVT skids (housing medium voltage transformers and auxiliary transformers), switchboards, cabling, switchgear, junction boxes, panelboards, and control cabinets. Crushed rock will be placed between and around the installed ESS equipment, and appropriate lighting will be installed to ensure worker safety during both construction and operation.

The construction of the Project substation will occur concurrently with the ESS installation. Grading for the substation, foundations, and future internal drive lanes will have already been completed as part of the broader site grading efforts. The grounding grid and underground conduit will be installed alongside the foundations for the transformer, electrical equipment enclosure, and high-voltage structures.

Once the foundations are in place, the Project substation equipment will be delivered and installed. Secondary containment areas for the transformer will be constructed in accordance with the Project-specific SPCC Plan, followed by final grading around the substation. The last phase of substation construction will include stringing electrical wires, installing the perimeter fence, and spreading coarse, clear, crushed rock throughout the fenced area, extending approximately five feet beyond the perimeter.

The on-site construction workforce will include laborers, tradespersons, supervisory staff, construction management personnel, and administrative and support teams. The Company will engage one or more Engineering, Procurement, and Construction (“EPC”) contractors to execute the Project. The selected EPC contractor(s) will be required to collaborate with subcontractors and vendors to promote local hiring and

economic benefits while ensuring the Project is completed safely, on schedule, and within budget.

Typical on-site construction staff levels will depend on the number of concurrent tasks being performed and the phasing of the Project. The Project will create approximately 80 jobs during the peak construction and installation phases, and three full-time jobs during the operations phase.

The Company estimates that there will be between five and 15 semi-trucks used daily for equipment delivery during construction. This volume of traffic will be limited to several weeks during delivery of battery module units and transformer skids; truck traffic will decrease once these components are delivered. Light duty trucks will also be used daily for transportation of construction workers to and from, and around the Project.

Typical construction equipment, such as scrapers, bulldozers, dump trucks, watering trucks, motor graders, vibratory compactors, and backhoes, will be used during construction. Specialty construction equipment that may be used during construction will include:

- Skid steer loader;
- Excavators;
- Pile driver;
- Light, medium, and heavy duty cranes;
- All-terrain forklift;
- Concrete truck and boom truck;
- High reach bucket truck; and
- Truck-mounted auger or drill rig.

Upon completion of construction, heavy equipment will be removed from the site.

4.3.2 Commissioning

Before the Project begins commercial operations, equipment inspections will be conducted in accordance with applicable Site Permit conditions and associated permit approvals (such as the Minnesota Department of Labor and Industry electrical permit, as applicable). Each component of the ESS, along with the associated communication systems, feeder lines, and SCADA systems, will undergo thorough inspection and testing. These procedures will take place at various stages throughout construction and upon completion of the construction phase to ensure compliance and operational readiness.

4.3.3 Restoration

As portions of the Project near completion, the 4.1-acre temporary laydown area and other disturbed areas will be restored. Where feasible, the site will be regraded to natural contours, and topsoil stockpiled during construction will be respread. Disturbed areas, both outside and within the Preliminary Development Area, will be de-compacted, reseeded, and re-vegetated using specific seed mixes outlined in the VMP (**Appendix D**) and the construction-phase SWPPP. These seed mixes are intended to complement ongoing vegetation management practices such as mowing and selective herbicide use. All restoration areas will be stabilized with erosion control measures such as silt fences, hydro-mulch, and sediment control logs until vegetation becomes established. A temporary cover crop will be planted alongside perennial seed mixes to protect against erosion during the establishment period. The Company expects post-construction cleanup and site restoration to take approximately two to four months.

The VMP outlines protocols for site preparation, installation of designated native seed mixes, invasive and noxious weed control, and implementation of erosion and sedimentation control measures. Restoration activities will be managed for a minimum of five years following initial implementation. Based on the often-unpredictable nature of any restoration effort, adaptive management strategies may be considered when baseline vegetation or restoration protocols are not feasible. The Company may employ an adaptive management framework to guide vegetation management, allowing for adjustments based on observed site conditions and performance outcomes, such as supplemental plantings or different invasive species control methods. Vegetation monitoring will occur throughout the active growing season (May through November) and will play a critical role in identifying ecological issues, assessing restoration progress, and informing necessary modifications to management strategies.

The VMP outlines several vegetation maintenance strategies that may be implemented at the Project, including manual removal of weeds and herbicide use inside fenced areas, rock covered areas adjacent to the fences, and access roads. Vegetated areas within the Preliminary Development Area will be maintained in a variety of ways to ensure the establishment and longevity of planted species. Areas outside of the Preliminary Development Area will be maintained in a manner consistent with the surrounding land use.

4.3.4 Operations and Maintenance

Following commissioning and the commencement of commercial operations, care, custody, and control of the Project facilities will formally transition from the construction team to the Company's operations staff. This handoff is coordinated by the Company construction manager in collaboration with operations personnel,

equipment manufacturers, and relevant construction and maintenance contractors to ensure seamless transfer from construction through COD. Post-transition, the Company's operations team assumes full responsibility for facility O&M, which will be conducted in accordance with applicable permits, industry best practices, and the manufacturers' specifications.

The Project will be operated and maintained by the Company, an affiliated entity, and/or a qualified third-party contractor. Core operational tasks will include routine inspections of electrical infrastructure, vegetation management in accordance with the approved VMP, and snow removal on access routes and within the ESS yard, as needed for safe and reliable operation.

The anticipated operational life of the Project is approximately 20 years. At the end of this period, the Company reserves the right to extend the Project's operational lifespan, contingent upon compliance with applicable permitting requirements or approved permit amendments. If continued operation is pursued, a determination will be made regarding continued use of the existing infrastructure or the integration of upgraded equipment and technologies.

The Company anticipates that long-term operation and maintenance of the facility will require up to three full-time personnel. A comprehensive maintenance plan will be developed to support optimal performance of the ESS, incorporating scheduled inspections and a predictive maintenance strategy for components subject to degradation. Component derating and degradation, defined as the gradual reduction in performance, capacity, or efficiency over time, is a known and expected aspect of long-term equipment operation. The Company will proactively manage these impacts to ensure sustained facility performance.

Following construction, site activity will be limited to periodic maintenance visits. These activities are further detailed in **Table 4.3**.

All maintenance activities will be conducted by trained and qualified personnel, and to the extent practicable, will occur during daylight hours to minimize potential disturbances and ensure worker safety.

Supervisory Control and Data Acquisition System

The Company will implement a comprehensive performance monitoring program for the Project utilizing real-time, continuous data acquisition through the SCADA system and energy metering infrastructure. The SCADA system will monitor key operational parameters, including energy storage performance, system availability, meteorological conditions, and communications functionality. ESS units will interface directly with the

SCADA platform to support remote performance monitoring, energy reporting, and diagnostic assessments. The system is designed to provide immediate alerts in response to operational anomalies, thereby enabling prompt corrective actions. Depending on the nature of the issue, these actions may be executed remotely or may necessitate on-site intervention by qualified personnel.

Equipment Inspection

Inspection of the main equipment will occur at regular intervals, including:

- **ESS:** Performance verification; check of air filters; heating, ventilation, and air Conditioning (“HVAC”) system; and monitoring;
- **Life Safety Systems:** Testing and certification of smoke, heat, and gas detectors and operation of emergency devices (e.g. active venting);
- **Inverters, transformer, and electrical panels:** Visual check of the devices, including connection equipment and the grounding network; check for presence of water and dust; check fluid levels for oil-filled transformers, if applicable;
- **Electrical check:** Check of the main switches and safety devices (fuses);
- **Noise:** Check of abnormal sounds;
- **Cabling and wiring:** Visual check of electrical lines (where visible) and connection box to verify their status;
- **Gen-tie, structures, and components:** Routine visual inspection (maintenance of structures may be performed by the on-site personnel or an independent contractor); and
- **Project substation:** Scheduled visual inspections.

Performance Monitoring

Performance monitoring of the Project facilities will consist of real-time telemetry of the data acquired by the SCADA system (energy stored, alarms, faults, etc.) and analysis by operators, remote company employees, to identify under performance or other abnormal conditions.

Facility Maintenance

Good housekeeping of the Project facilities will include, as required, access road maintenance, snow removal, vegetation maintenance (method dependent on plant type and seasonality; likely traditional herbicides), fence and gate inspection, and lighting system checks.

Maintenance Frequency

Table 4.3 provides more information on the anticipated frequency of the O&M tasks associated with the Project. The table represents the anticipated formal frequency of these tasks. The frequency of inspection may be varied based on facility demands and experience with performance of certain components and Project features and will include regular informal inspections by onsite O&M staff.

Table 4.3: Estimated Project Operations & Maintenance Tasks and Frequency

Plant Device	Task	Preliminary Frequency
ESS	System Visual Inspection	Once Yearly
	Filter Inspection	Once Yearly
	Battery Condition Check	Continuous - Remote
	Breaker Check	Once Yearly
	Cooling System Check	Once Yearly
Electric Boards	Case Visual Check	Once Yearly
	Fuses Check	Once Yearly
	Surge Arresters Check	Once Yearly
	Torque Check	Once Yearly
	DC Voltage and Current Check	Once Yearly
	Grounding Check	Once Yearly
Inverter	Case Visual Inspection	Once Yearly
	Air Intake and Filters Inspections	Once Yearly
	DC Voltage and Current Check	Once Yearly
	Conversion Efficiency Inspection	Once Yearly
	Data Logger Memory Download	Once Yearly
	Fuses Check	Once Yearly
	Grounding Check	Once Yearly
	Torque Check	Once Yearly
Support Structures	Visual Check	Once Yearly
MV Transformers	Visual Check	Once Yearly

4.4 Decommissioning and Repowering

The objective of decommissioning is to restore the site to a condition that will facilitate its preconstruction use at the end of operation. At the end of the Project's operational life, the Company will either take necessary steps to continue operation of the Project

(such as re-permitting and retrofitting) or will decommission the Project. A preliminary Project Decommissioning Plan is included in **Appendix E**.

4.4.1 Decommissioning

At the end of commercial operations, the Company will be responsible for removing all ESS components and associated facilities. At the end of the Site Permit term, the Company reserves the right to extend operations of the Project by applying for an extension of the permit, if necessary, and continuing operation. Should the Company decide to continue operation, a decision will be made as to whether the Project will continue with the existing equipment or to upgrade the facilities with newer technologies.

Decommissioning of the Project at the end of its operational life would include removing the ESS units (which include batteries and other auxiliary equipment), steel foundation posts and beams, transformers, underground cables and lines, equipment pads and foundations, equipment units, ancillary equipment, and fencing. The Project substation is assumed to remain in place at the time of decommissioning, so this was excluded from the Decommissioning Plan (**Appendix E**). Standard decommissioning practices will be used, including dismantling and repurposing, salvaging/recycling, or disposing of the ESS improvements, and restoration. The Company will provide written notice to the Commission, landowners, and local units of government prior to the start of decommissioning activities. These parties will again be notified once decommissioning activities have been completed. A preliminary Decommissioning Plan is provided in **Appendix E** and is generally summarized below.

Timeline

Decommissioning is estimated to take approximately six months to complete, and all equipment and materials would be recycled or disposed of properly.

Financial Resource Plan

The Company will be responsible for all costs to decommission the Project and associated facilities. Decommissioning of the Project is expected to cost approximately \$20,207,500 with an estimated scrap/salvage value of \$1,132,000. Xcel Energy utilizes the net salvage rate methodology used for all its generation facilities. At the time of decommissioning, the costs of removal will be treated as a debit to Xcel Energy's depreciation reserve and the reserve balance will be reduced. The preliminary decommissioning plan for the Project reflects this methodology and, in a separate docket, the Company will seek Commission approval of the net salvage rates used for the Project.

The Company will submit a revised Decommissioning Plan any time there is a change in ownership or permit amendment. Each revised plan will reflect advancements in construction techniques, reclamation equipment, and decommissioning standards. The Company will abide by the applicable Site Permit condition(s) and ensure the Project is decommissioned in accordance with the Site Permit. Additional information on financial resource plans and assurances can be found in the preliminary Decommissioning Plan in **Appendix E**.

Removal and Disposal of Project Components

Decommissioning of the Project will involve the use of standard construction equipment such as truck-mounted cranes, loaders, bulldozers, dump trucks, and soil decompaction machinery. All decommissioning activities will adhere to applicable local, state, and federal regulations, and the Decommissioning Plan in **Appendix E** will be updated as necessary to reflect technological advancements in energy storage systems and evolving industry practices:

- **Battery and Battery Units:** ESS battery modules will be discharged to manufacturer-recommended levels prior to removal and transport. Battery units will be removed and shipped to licensed facilities for dismantling and recycling. All lithium-ion batteries will be handled by qualified recyclers. Refrigerants from HVAC systems will be collected on-site in appropriate containment systems for reuse or recycling. Electrical equipment will be disconnected, disassembled, and either reconditioned for reuse, sold as scrap, recycled, or disposed of in accordance with regulatory standards. Foundations, underground cables, and duct banks associated with the ESS will be removed to a minimum depth of four feet. Topsoil will be replaced, and disturbed areas will be de-compacted and restored to pre-construction conditions through regrading and re-vegetation.
- **Steel Foundation Posts, Equipment Foundation, and Ancillary Components:** All steel foundation posts and associated structural elements will be extracted to their full embedded depth, processed to manageable size, and transported to a licensed metal recycling facility. Removal will be completed using backhoes or equivalent equipment. Soils compacted during extraction activities will be de-compacted to restore conditions suitable for vegetation reestablishment. Materials will be reused, recycled, or disposed of responsibly, consistent with industry standards and regulatory requirements.
- **Underground Electrical Infrastructure:** All underground cables and conduits will be removed to a depth of at least four feet. Components located below this depth may be left in place to avoid unnecessary surface disturbance, unless

otherwise required by regulation. During excavation, topsoil will be segregated and stockpiled, and subsoil staged separately to maintain soil profile integrity. Following removal, subgrade soils will be compacted to match surrounding densities, and topsoil will be redistributed to support re-vegetation and maintain proper drainage.

- **Transformers and Ancillary Electrical Equipment:** All transformer station components will be fully disconnected and removed. Oil-containing equipment not rated for transport with fluids will be drained and stored in sealed containers for recycling or compliant disposal. All equipment will be reconditioned for reuse, recycled, or otherwise managed in accordance with applicable waste handling regulations.
- **Operations and Maintenance Building:** O&M facility space at the Blue Lake Peaking Plant will remain in place and be decommissioned as a part of the peaking plant at the end of the facility's useful life.
- **Fence:** All fencing and support foundations will be removed using skid-steer loaders or similar light equipment. Materials will be reconditioned, recycled, or properly disposed of. The disturbed areas will be regraded and restored to pre-construction conditions to the extent practicable.
- **Access Roads:** Existing access roads will be retained or removed based on coordination with Magellan and the Blue Lake Peaking Plant operations team. If retained, no further restoration will be conducted. If removed, aggregate materials will be excavated using loaders or backhoes and transported offsite for reuse, sale, or disposal. Clean aggregate may be used as landfill daily cover or distributed to adjacent landowners or other Company properties as clean fill. Internal drive lanes, constructed with geotextile fabric and approximately six inches of compacted aggregate, will be fully removed. The subgrade will be de-compacted using appropriate equipment such as a chisel plow, and large rocks will be removed to restore the area to conditions conducive to plant growth.

Restoration/Reclamation of Facility

The Company will undertake site restoration and reclamation activities to return the site to pre-construction conditions, to the extent practicable. Restoration measures will be implemented to support the reestablishment of existing conditions, including soil decompaction, topsoil replacement, and appropriate vegetation management.

Land use following decommissioning will ultimately be determined in consultation with other Company staff and may reflect future development opportunities or preferences

at the time of site closure. In the absence of a specified post-project land use, the Company will stabilize any unvegetated portions of the site using a native perennial seed mix selected to support native or locally adapted plant communities. Restoration in such cases will aim to preserve natural hydrologic function and maintain continuity with plant communities established during the operational phase, while minimizing additional site disturbance and unnecessary vegetation removal.

The decommissioning effort will implement best management practices (“BMPs”) to minimize erosion and to contain sediment on the Project to the extent practicable, and the following reclamation activities will be performed:

- Minimize new disturbance and removal of existing vegetation to the greatest extent practicable;
- Remove ESS equipment and all access roads up to a minimum depth of four feet, backfill with subgrade material, and cover exposed subgrade material with suitable topsoil as necessary to allow adequate root penetration for plants, and so that subsurface structures do not substantially disrupt groundwater movements;
- Any topsoil that is removed from the surface for decommissioning will be stockpiled to be reused when restoring plant communities or when restoring to existing natural land uses. Once decommissioning activity is complete, topsoil will be respread to assist in establishing and maintaining plant communities;
- During and after decommissioning activities, erosion and sediment control measures will be installed, such as silt fences, bio-rolls, and ditch checks, in all disturbance areas where potential for erosion and sediment transport exists, consistent with stormwater management objectives and requirements; and
- Remediate any petroleum product leaks and chemical releases from equipment operation and electrical transformers prior to completion of decommissioning.

Decommissioning and restoration activities will be completed within six months after the end of commercial operations.

Post-Restoration Monitoring

Decommissioning of the Project will comply with NPDES Permit, SPCC Plan, and SWPPP, if grading activities are necessary and exceed applicable permit thresholds. Decommissioning may include post-restoration monitoring as required by the NPDES Permit and SWPPP and other applicable requirements.

4.4.2 Repowering

As the energy storage industry advances, with emerging technologies offering improved efficiency and cost-effectiveness, repowering the Project may become a feasible strategy over time. Triggers for repowering may include equipment degradation or failure, escalating maintenance costs, the desire to extend the operational lifespan of the facility, or the opportunity to enhance system performance and energy output. The Company will conduct periodic evaluations of system performance, lifecycle costs, and the availability of technological upgrades to determine the appropriateness and feasibility of repowering. Any repowering activities will be carried out in full compliance with applicable local, state, and federal regulations. If required, the Company will obtain a new or amended Site Permit prior to initiating any repowering activities.

5. ENVIRONMENTAL ANALYSIS

Environmental Analysis calculations are based on the 70-acre site. This approach accounts for the potential need for development anywhere in the overall site, rather than being limited to the previously defined Preliminary Development Area. It is unlikely that permanent structures or other Project features shift from the Preliminary Development Area; however, this approach is designed to account for unanticipated design complications. Furthermore, for any discussions of resources that are located outside of the site (such as parks, trails, and other natural resources), the site boundary is used as a consistent reference point for assessing proximity and potential interactions with the Project.

5.1 Environmental Setting

The site includes an existing Company owned substation in an industrial area conducive to ESS facility development in the city of Shakopee, Minnesota, north of US-169 and south of County Road 101 (Highway 101) (**Figure 2**). Land use in the immediate vicinity of the Project is dominated by industrial business parks and commercial areas; residential areas are located south of US 169. There is one delineated wetland feature mapped within the site (**Map 8**). No other waterbodies or flowlines are mapped within the site (**Map 8**). Further discussion of the environmental setting can be found in **Sections 5.5.1 through 5.5.8**.

Roads that surround the site are state and federal highways, county roads, and city roads. The site is bordered on its northern side by a railway owned by the Chicago, Milwaukee, St. Paul and Pacific Railroad Company. County Road 101 E (Highway 101) is located just north of this railway. US Highway 169 runs along the southern border of the site and is managed by the MnDOT. The existing Xcel Energy Blue Lake Substation is located within the selected site. The proximity of the substation allows for a short overhead gen-tie (less than 500 feet) from the proposed Project substation to the existing Blue Lake Substation (**Figure 2**).

The MnDNR and the U.S. Forest Service have developed an Ecological Classification System (“ECS”) for ecological mapping and landscape classification in Minnesota that is used to identify, describe, and map progressively smaller areas of land with increasingly uniform ecological features. Through the ECS, the State of Minnesota is split into Ecological Provinces, Sections, and Subsections. The Project is located within

the Eastern Broadleaf Forest Province (222), Minnesota & NE Iowa Morainal (222M), and the Big Woods Subsection (222Mb).¹²

The Big Woods Subsection is located in the southeast portion of Minnesota and consists of savanna along the eastern border and tallgrass prairie in the central and western parts. Depth of drift over bedrock in this subsection varies from 100 to 400 feet in depth, and soils are made up of predominantly loamy soils with textures varying from loam to clay loam. Annual precipitation ranges from 29 inches in the west to 31 inches in the east, with 12 to 13 inches of growing-season precipitation. The growing season typically lasts between 145 to 150 days. Fire was a common natural disturbance prior to Euro-American settlement, though less prevalent than in the prairies in the east, due to the area's lakes and irregular topography. Pre-settlement vegetation was primarily oak woodland and maple-basswood forest. Currently, the predominant land use in this subsection is agriculture; the remaining 10-15% pre-settlement land use is upland forested and wetland.¹³

5.2 Human Settlement

5.2.1 Aesthetics

The site is located in an industrial setting and is naturally screened by trees and bodies of water from adjacent industrial, commercial, and residential areas. Existing rows of trees and shrubs in conjunction with varying elevations provide screening from U.S. Highway 169 to the south of the site.

The site and surrounding lands are characteristic of urbanized landscapes, comprising a mix of industrial, commercial, residential, and semi-forested land uses. Recreational opportunities and scenic vistas are limited within the area. Viewsheds are generally constrained by both vegetation and topographic features, and the visual character is heavily influenced by the built environment. Nearby settlements consist of residential neighborhoods and commercial establishments located near the junction of Highway 101 and U.S. Highway 169. Prominent horizontal features in the landscape include U.S. Highway 169, local county and city roads, the railroad and adjacent Valley Park Union Pacific Depot. Vertical elements, particularly the Company's transmission lines near the site, are visible from considerable distances and represent the most prominent visual features in the landscape. Additional visual elements include the existing Blue Lake

¹² MnDNR. 1997. Ecological Classification System. (available from: <https://www.dnr.state.mn.us/ecs/index.html>). Accessed April 2025.

¹³ MnDNR. n.d. Big Woods Subsection. (available from: <https://www.dnr.state.mn.us/ecs/222Mb/index.html>). Accessed April 2025.

Peaking Plant, Blue Lake Substation, and various electrical transmission and distribution lines, many of which run perpendicular to adjacent highways and parallel to the site (see **Section 5.2.8**).

There is a residential neighborhood located south of the site, with the nearest residence located over 540 feet south of the site boundary (more than 2,000 feet from any proposed permanent infrastructure). The only buildings within the site are the permanent substation features and the Magellan valve site.

The Minnesota River Valley National Scenic Byway is the only designated Minnesota Scenic Byway in Scott County.¹⁴ The Minnesota River Valley National Scenic Byway ends in Belle Plaine, Minnesota, southwest of the City of Shakopee.

Impacts and Mitigation Measures

Visual impacts were considered for features within a quarter mile of the Project site, including public roads, railroads, parks, and permanent structures. No features were deemed to have a direct or significant line of sight to the Project. Travelers using the westbound ramp to US 169 may briefly see the tallest structures (gen-tie line). While the facility may be momentarily visible from the adjacent roadway, its presence will be minimal and fleeting for passing motorists. The gen-tie line may be visible from Quarry Lake Park; however, given the lower elevation of the park (approximately 720 feet above mean sea level) in comparison to the western edge of the Preliminary Development Area (approximately 750 feet above mean sea level), visual impacts are expected to be minimal.

The Company is planning to conduct a tree inventory survey in Q3 2025 within the site and coordinate with the City of Shakopee on a tree screening plan along the 70th Street South corridor to provide visual screening of the Project from adjacent properties and public viewpoints and aid requests the City of Shakopee has made with regard to tree restoration. The tree screening plan will likely further limit potential visual impacts to the nearby Quarry Lake Park. The selection of native and regionally appropriate species would be coordinated with the City of Shakopee and enhance ecological compatibility, contribute to long-term vegetation stability, and support local biodiversity. A vegetative buffer would also help reduce potential visual impacts identified in the viewshed

¹⁴ MnDOT. n.d. Minnesota Scenic Byways. (available from: <https://www.dot.state.mn.us/scenicbyways/>). Accessed April 2025.

analysis and may provide ancillary benefits such as erosion control and minor improvements in local air quality.

The majority of the Preliminary Development Area will be gravel for permanent Project infrastructure, a stormwater management pond, Project substation, fencing, access road connections, and parking and storage outside the fence line. Most of the ESS facility will be a non-descript neutral color, with most components being less than 15 feet in height. The Project substation is anticipated to be less than 30 feet in height, with the tallest portion of the Project anticipated to be a 60–90-foot-tall pole for construction of the gen-tie. ESS units will be approximately 10-12 feet tall and likely not be visible from U.S. Highway 169, Quarry Lake Park, or neighboring residential homes to the south due to the site topography, existing vegetative screening, and planned vegetative screening. It is similarly unlikely that Project infrastructure is visible from Highway 101 to the north, since the site is blocked by vegetation, a railway and associated train depot, and the industrial business park.

Exterior security lighting will be installed at the Project substation and within the ESS pad areas. Lights will be used if work or maintenance is required after dark and as needed by maintenance personnel. Switch activated lights will be placed near each ESS unit for repair purposes. Lighting will be downward facing and will minimize blue hues. There are no residences within 500 feet of the Project site and 2,000 feet of permanent Project infrastructure; therefore, impacts to light-sensitive land uses are not anticipated given the Project location coupled with minimal required lighting for operation of the Project.

The Project has been strategically sited and designed to minimize visibility from neighboring commercial properties, thereby preserving the visual integrity and aesthetic experience of those spaces. Based on the industrial nature of the Project site in comparison to the surrounding area, no significant changes to the visual landscape are anticipated. While the Project will create additional infrastructure when compared to the current residential, commercial, and industrial uses in the area, the visual impact from other existing public areas is expected to be limited. Additionally, Xcel Energy will complete a tree inventory survey of the site in Q3 2025 that will help determine applicable tree screening along 70th Street South.

5.2.2 Cultural Values

Cultural values include perceived community beliefs or attitudes in a given area which provide a framework for community. According to the U.S. Census Bureau, the majority of the population in Scott County identifies as White, with an ethnic

background of European origin.¹⁵ The majority of the population in the City of Shakopee also identify as White with an ethnic background of European origin.¹⁶

The region surrounding the Project has cultural values tied to the area’s German, Czech, Scandinavian, and Native American heritage, as well as the agricultural economy. There are several organizations dedicated to “collecting and preserving the history” and heritage of Scott County, including the Scott County Historical Society, the Belle Plaine Historical Society, and other local historical societies, libraries, and museums.¹⁷ The City of Shakopee also maintains the history of the area through the Shakopee Heritage Society.¹⁸ Cultural representation in community events is reflected in the arts, cuisine, agricultural produce, and holidays. Annual local and regional events, festivals, and fairs typically do not have a primary focus of ethnic heritage.^{19,20} Construction of the proposed Project is not expected to conflict with the cultural values or ethnic heritage of the area.

Through its strategic and land use planning initiatives, Scott County has prioritized environmental sustainability and sustainable practices. The County’s 2025-2027 Strategic Plan includes a vision of “People...[supporting] a clean environment.” Strategies under the plan include creating a more “sustainable, resilient system for

¹⁵ U.S. Census Bureau. 2020. Scott County - Profile of General Population and Housing Characteristics: DP1 Table (available from: <https://data.census.gov/table/DECENNIALDP2020.DP1?q=Scott+County,+Minnesota&t=Race+and+Ethnicity&y=2020>). Accessed April 2025.

¹⁶ U.S. Census Bureau. 2020. City of Shakopee - Profile of General Population and Housing Characteristics: DP1 Table (available from: <https://data.census.gov/table/DECENNIALDP2020.DP1?q=Shakopee+City,+Minnesota&t=Race+and+Ethnicity&y=2020>). Accessed April 2025.

¹⁷ Scott County. History. (available from: <https://www.scottcountymn.gov/905/History>). Accessed April 2025.

¹⁸ City of Shakopee. History of Shakopee. (available from: <https://www.shakopeemn.gov/living-here/about-shakopee/history-of-shakopee>). Accessed April 2025.

¹⁹ Scott County. Connect with us. (<https://www.scottcountymn.gov/1020/Connect-with-Us>). Accessed April 2025.

²⁰ City of Shakopee. Community Calendar. (available from: <https://www.shakopeemn.gov/recreation/things-to-do>). Accessed April 2025.

protecting natural resources and maintaining regional infrastructure”, as well as objectives for adapting community design.²¹

In 2020, the City of Shakopee implemented its 2020-2024 Strategic Plan. This Plan includes the community values which include innovation, including “creatively improv[ing] our services and our community.”²²

In its 2040 Comprehensive Plan, Scott County listed incorporating sustainable principles and energy conservation practices as a key “action or recommendation that the County should undertake”.²³ The Plan also identified adapting to new technologies and innovation in the energy field as a strategic challenge essential to tackle to fulfill implementation of the Comprehensive Plan.²³ They state that Scott County, as a “high-growth area,” has a responsibility to “lower the need for additional power plants as the population continues to increase.”²³

The City of Shakopee Comprehensive Plan (“Envision Shakopee”) lists goals of “Encourag[ing] and require[ing] high-quality environmentally-sensitive development” and “Cultivat[ing] a culture of environmental awareness...”.²⁴

Construction of the proposed Project aligns with goals and initiatives described in the Scott County and City of Shakopee strategic and comprehensive plans.

Impacts and Mitigation Measures

As the site is located on private land, adjacent to similar existing uses, and sufficiently setback from public rights-of-way (“ROW”), construction and operation of the Project would align with the environmental goals and standards for new technologies and energy conservation that are stated in the Scott County strategic and comprehensive

²¹ Scott County. 2024. Strategic Plan. (available from: <https://www.scottcountymn.gov/DocumentCenter/View/23239/2025-2027-County-Strategic-Plan>). Accessed April 2025.

²² City of Shakopee. 2020. Strategic Plan. (available from: <https://www.shakopeemn.gov/government/mayor-city-council/strategic-plan>). Accessed April 2025.

²³ Scott County. 2020. Scott County Comprehensive Plan, pages XIII.13-17 (available from: <https://www.scottcountymn.gov/DocumentCenter/View/12631/Scott-County-2040-Comprehensive-Plan-?bidId=>). Accessed April 2025.

²⁴ City of Shakopee. Envision Shakopee. (available from: <https://www.shakopeemn.gov/business-development/planning-development/planning-division/2040-comprehensive-plan>). Accessed April 2025.

plans. No impacts to cultural values or community events are anticipated, and therefore, no mitigation measures are proposed.

5.2.3 Displacement

As previously indicated, the Project is located in a predominantly industrial area, adjacent to the existing Blue Lake Substation and Blue Lake Peaking Plant on Company-owned land, with a residential area on the other side of Highway 169 (**Map 2**). The nearest structures are the substation within the site, the Blue Lake Peaking Plant approximately 140 feet west of the site, and a warehouse associated with the industrial park approximately 400 feet to the north of the site. The nearest residence is located across US Highway 169, approximately 540 feet south from the site boundary (**Map 2**).

Impacts and Mitigation Measures

Because none of the structures associated with the substation, the peaking plant, the industrial park, or the neighborhood will be removed, the Project will not result in any displacement and no mitigation is proposed.

5.2.4 Environmental Justice

The Commission requires project proposers to identify “whether the proposal is located in an environmental justice (“EJ”) area using census criteria in Minn. Stat. 216B.1691, subd. 1(e).” That statute provides:

“Environmental justice area” means an area in Minnesota that, based on the most recent data published by the United States Census Bureau, meets one or more of the following criteria:²⁵

- 40 percent or more of the area’s total population is nonwhite;
- 35 percent or more of households in the area have an income that is at or below 200 percent of the federal poverty level;
- 40 percent or more of residents over the age of five have limited English proficiency; or
- the area is located within Indian country, as defined in United State Code, title 18, section 1151.

²⁵ MPCA. n.d. Environmental Justice. (available from: <https://www.pca.state.mn.us/about-mpca/environmental-justice>). Accessed April 2025.

These criteria are required for the Commission’s identification and review of EJ areas in relation to the Project. The Company has reviewed these criteria for the Project and are described below.

The MPCA maintains the Minnesota Areas of Environmental Justice Concern interactive map, which identifies areas of EJ concern in the State.²⁶ The MPCA uses U.S. Census Bureau’s 2023 Cartographic Boundary File, the five-year (2018–2022) American Community Survey data, and MnDOT’s Tribal Government data in preparing the map. A census tract is considered an area of concern if it has higher concentrations of low-income residents, people of color, or limited English proficiency.

The MPCA refers to the U.S. Census Bureau and U.S. Department of Health and Human Services to define poverty, a threshold which is calculated using a family’s household size and composition. Because the MPCA is using data from 2018–2022, the poverty threshold is calculated based on the 2022 data for census tract 803.04, in which the Project is located. In 2022, an individual in the U.S. was considered to be in poverty with an income of \$14,880 or less, according to the 2022 Poverty Threshold Data Table,²⁷ therefore, 200% of the poverty level would be calculated at \$29,760 per person.

Based on the MPCA EJ criteria, the census tract within which the site is located contains one MPCA-identified criteria of concern for EJ (**Map 3**). **Table 5.2-1** and **Map 3** provide more information on which of the criterion of concern are applicable to the Project.

²⁶ MPCA. 2021. Understanding Environmental Justice in Minnesota Introduction. (available from: <https://experience.arcgis.com/experience/bff19459422443d0816b632be0c25228/page/Page?views=Introduction>). Accessed April 2025.

²⁷ U.S. Census Bureau. 2024. Poverty Thresholds for 2022 by Size of Family and Number of Related Children Under 18 Years. (available from: <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>). Accessed April 2025.

Table 5.2-1: Environmental Justice Concern Criteria²⁶

Criteria	Project Details
40 percent or more of the area’s total population is nonwhite	According to the 2018-2022 American Community Survey data, 42.6% of people in census tract 803.04 are people of color.
35 percent or more of households in the area have an income that is at or below 200 percent of the federal poverty level	N/A
40 percent or more of residents over the age of five have limited English proficiency	N/A
The area is located within Indian country, as defined in United State Code, title 18, section 1151	N/A

Areas outside of the site with one or more of the MPCA defined EJ criteria were identified in the census tracts immediately adjacent to the Project site (**Map 3**). Listed criteria in the city are at least 35% of people reported income less than 200% of the federal poverty level and 40% or more people of color. There is one census and state tribal area of the Shakopee Mdewakanton Sioux located south of the Project site (**Map 3**).

Section 5.2.10 (Socioeconomics) summarizes population, race, housing, income, and poverty for the city, county, and state.

Impacts and Mitigation Measures

Because the Project is within an EJ area of concern, the Company will consider mitigation measures. Though these potential mitigation measures are primarily targeting various factors for construction of the Project (traffic, dust and noise, visual impacts), they may be implemented across the entirety of the site and may aid effects on noise and air quality generated by the Project in the EJ area. The mitigation measures to be considered are as follows:

- Working with local school districts to identify school routes and commute times to minimize construction traffic along those roads during peak use;
- Using equipment haul roads that would avoid residential areas, schools, and peak commuter times, where possible;
- Complying with all fugitive dust requirements specified in **Section 5.5.1**, including implementation of a dust control plan, as well as limiting the areas of ground disturbance, to minimize fugitive dust construction;
- Implementing noise control measures during construction, if necessary;

- Limiting most construction activity to Monday through Friday during daylight hours, to the extent feasible, to limit noise and light;
- Complying with applicable air quality regulations;
- Reducing vehicle and equipment speed in construction work areas and on access roads to account for environmental conditions;
- Community engagement via City Officials, local tribal entities, and public meetings through Commission approval; and,
- Economic and workforce inclusion by hiring local craft labor.

After construction is completed, temporary workspaces will be restored in accordance with any federal, state, or local permit requirements. Areas disturbed by construction will be graded to match original contours except at locations where permanent changes are necessary to prevent scour, erosion, or potential exposure of construction.

The Project has been designed to minimize environmental disturbance, with no anticipated displacement (**Section 5.2.3**), disruption of access to community services (**Section 5.2.7**), or elevated exposure to air (**Section 5.5.1**), noise (**Section 5.2.6**), or visual/aesthetic (**Section 5.2.1**) impacts in EJ areas. Construction-related activities will be contained within the Project site boundaries, and appropriate best management practices will be implemented to control dust, noise, and traffic.

Furthermore, the Project does not intersect any areas of cultural or historical significance identified by tribal or community stakeholders (**Section 5.4**), nor does it require easements or access through residential zones associated with EJ populations. As such, the Project is not expected to result in disproportionately high or adverse human health or environmental effects on minority populations, low-income populations, or tribal communities.

The Project will continue to comply with all applicable federal, state, and local regulations and will engage stakeholders as appropriate.

5.2.5 Health and Safety

Health and safety are a priority for the Project, and the Company intends to proactively address potential issues relating to construction activities, electrocution, and environmental hazards.

5.2.5.1 Public Health & Safety

Construction and operation of the Project are expected to have minimal impact on the health and safety of the general public. Health and safety concerns during construction of an ESS project are similar to any electrical substation and include injuries due to falls,

equipment malfunction and/or misuse, and electrocution. Potential public health concerns during construction and/or operation include chemical exposure, fire and explosion hazards, and safety concerns.

Impacts and Mitigation Measures

As outlined in **Section 4.1.4**, permanent security fencing with lockable gates will be installed around the perimeter of both the ESS facility and the Project substation, in compliance with applicable electrical safety codes. Access to these areas will be restricted to authorized personnel, or individuals under their supervision. Warning signage will be prominently displayed to deter unauthorized access, including notices of high-voltage equipment at the substation to mitigate risks associated with accidental entry. These measures are intended to prevent incidents such as accidental electrocution. Furthermore, all equipment, tools, and hazardous substances associated with the Project will be securely stored, regularly maintained, and monitored within the O&M facility at the Blue Lake Peaking Plant.

Grounding of electrical equipment, transmission lines, and other applicable infrastructure will be conducted in accordance with all relevant federal and state standards to ensure personnel safety and maintain proper system functionality. Grounding systems will be thoroughly inspected and verified prior to the commencement of operations. Any deficiencies, failures, or modifications in the grounding infrastructure will be promptly detected through the Project's active monitoring system.

To prevent health and safety incidents, the Company requires all parties involved with the Project to create comprehensive health and safety plans and protocols. During construction, an emergency incident or accident may occur and would be addressed as needed by Project personnel and local responders as further discussed in **Section 5.2.7**. The Company will ensure workers have proper training to successfully complete required construction activities while reducing risks associated with it.

During operations, the Project will not require the use or storage of large quantities of hazardous materials that might otherwise have the potential to spill or leak into area groundwater.

A SPCC Plan will be required for the main power transformers located within the Project substation, as well as for any oil-filled operational equipment (e.g., inverter/transformer units) or bulk oil storage at the O&M facility. The SPCC Plan will outline procedures for the proper storage, cleanup, and disposal of oil products associated with the Project. All transformers will be equipped with containment systems in accordance with EPA requirements. Monitoring, transportation, and handling of oil

or oil-containing equipment will be performed exclusively by trained and qualified personnel following established protocols and in compliance with all applicable regulations. The SPCC Plan will be finalized and available on-site prior to the start of construction and will comply fully with EPA standards. An operation SPCC Plan will be developed and implemented prior to the commencement of operations.

The Company will coordinate with all emergency and non-emergency response teams for the Project, as needed, including a formal training session prior to construction commencing. Emergency services for responding to public health and safety emergencies are further described in **Section 5.2.7**.

Construction and operation of the Project are expected to have minimal impact on the health and safety of the general public. Health and safety concerns during construction of an ESS project are typical to any electrical substation and include injuries due to falls, equipment malfunction and/or misuse, and electrocution. Potential public health concerns during construction and/or operation include chemical exposure, fire and explosion hazards, and safety concerns.

5.2.5.2 Environmental Contamination

The Company conducted a preliminary review of the EPA’s “MyEnvironment” database and map to identify federally listed sites that may have previously documented environmental impacts.²⁸ A review of this information indicates that nine hazardous waste designated sites associated with the Resource Conservation and Recovery Act (“RCRA”) are present in a one-mile buffer surrounding the site. No RCRA sites were identified within the site. The closest identified site (the Blue Lake Peaking Plant) is located approximately 0.3 miles from the site. There are five hazardous air pollution designated sites (“ICIS-AIR”) within a one-mile buffer of the site, but none within the site. The closest identified ICIS-AIR site is the Blue Lake Peaking Plant. There is one water discharge site associated with the NPDES site approximately 0.6 miles away from the site. Finally, there is one brownfield property associated with an Assessment, Cleanup and Redevelopment Exchange System approximately 0.7 miles away from the site.²⁸

²⁸ EPA. 2022. MyEnvironment. (available from: <https://enviro.epa.gov/myenvironment/>). Accessed April 2025.

Environmental contamination information from the MPCA’s “What’s in My Neighborhood” database was accessed on April 4, 2025.²⁹ This online application offers a way to access a wide variety of environmental information about a given site and location. The website provided data on:

- Potentially contaminated sites: A searchable inventory dating back to the 1980s of contaminated properties, sites that have already been cleaned up, and those currently being investigated or cleaned up; and
- Environmental permits and registrations: A searchable inventory of businesses that have applied for and received different types of environmental permits and registrations from the MPCA.

Review of the database indicated there are 48 mapped records (some containing multiple sites) within one mile of the site.²⁹ While there are no mapped records within the site, the records occurring within one-mile buffer of the site are listed below:

- 21 Construction stormwater sites;
- 14 Hazardous waste sites;
- 12 Aboveground storage tank sites;
- 8 Investigation and cleanup sites;
- 6 Air Quality sites;
- 6 Underground storage tank sites;
- 6 Industrial stormwater sites;
- 3 Pollution prevention sites;
- 1 Solid waste site; and
- 1 Water quality site.

Two records listed above occur directly adjacent to the site (the Blue Lake Substation – Construction stormwater site and the Blue Lake Peaking Plant – Air quality, Aboveground tanks, and Hazardous waste sites).

Impacts and Mitigation Measures

Given that the Project is located within an industrial area and all construction and operational activities are confined to the designated site, it is unlikely that the Project

²⁹ MPCA. 2025. What’s in My Neighborhood. (available from: <https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=9d45793c75644e05bac197525f633f87>). Accessed April 2025.

will adversely affect the environmental conditions of the surrounding areas. No mitigation measures are being proposed with respect to environmental contamination.

5.2.5.3 Electromagnetic Field

All electrical devices generate electric and magnetic fields (“EMF”). Electric fields are produced by voltage or the presence of electrical charges, while magnetic fields result from the flow of electric current through conductors. These fields are commonly associated with transmission lines, power feeder lines, substation transformers, building wiring, and electrical appliances. The strength of the electric field is directly related to the voltage, whereas the strength of the magnetic field corresponds to the amount of current flowing through the conductors. EMF can be present in both indoor and outdoor environments.

According to the U.S. National Cancer Institute, there is no consistent evidence establishing a link between any source of non-ionizing EMF and cancer.³⁰ Similarly, the Minnesota State Interagency Working Group on EMF Issues, following extensive literature reviews and research, concluded that “the current body of evidence is insufficient to establish a cause-and-effect relationship between EMF and adverse health effects”.³¹ Based on the current scientific understanding, the Commission has determined that “there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for exposure.”³²

Sources of EMF associated with the Project include the electrical feeder lines within the facility, transformers installed at each inverter, and the gen-tie, which will connect the Project substation to the Blue Lake Substation. EMF generated by electrical collection lines and transformers decreases rapidly with increasing distance from the source. In general, higher-voltage lines produce higher EMF levels at the source; however, these fields attenuate quickly with distance.

At present, there are no Minnesota-specific regulations regarding magnetic field exposure. However, the International Commission on Non-Ionizing Radiation

³⁰ National Cancer Institute. 2022. Electromagnetic Fields and Cancer. (available from: <https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/electromagnetic-fields-fact-sheet>). Accessed April 2025.

³¹ The Minnesota State Interagency Working Group on EMF Issues. 2002. A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options. (available from: <https://apps.commerce.state.mn.us/eera/web/projectfile?legacyPath=/opt/documents/EMF%20White%20Paper%20-%20MN%20Workgroup%20Sep%202002.pdf>). Accessed April 2025.

³² OAH Docket No. 7-2500-20283-2, ALJ Findings of Fact, Conclusions and Recommendations at Finding 216 (April 22, 2010 and amended April 30, 2010).

Protection has established a widely accepted guideline for public exposure to magnetic fields, setting a reference level of 833 milligauss (“mG”).³³ While there is no federal standard for electric fields associated with transmission lines, the Commission has adopted a maximum electric field limit of 8 kV per meter, measured at a height of one meter (approximately 3.28 feet) above ground. This standard was developed to prevent hazardous shocks from induced currents when large conductive objects are located under AC transmission lines of 500 kV or greater.

Impacts and Mitigation Measures

The Company provides information to the public, interested customers, and employees so they can make informed decisions about magnetic fields. Such information includes the availability for measurements to be conducted for customers and employees upon request.

Project-specific modeling of EMF associated with the proposed electrical feeder lines and inverters was not conducted; however, peer-reviewed studies provide representative data for similar infrastructure. A Canadian study evaluating EMF levels at a wind energy facility with a 27.5 kV substation and buried electrical lines—slightly lower in voltage than the feeder lines proposed for this Project—measured magnetic fields at or near background levels at one meter above ground over buried lines, and up to 16.5 mG directly beneath overhead 27.5 kV lines.³⁴ These measured levels fall well below internationally recognized public exposure guidelines for magnetic fields (833 mG, as established by the International Commission on Non-Ionizing Radiation Protection) and the MPUC’s electric field limit of 8 kilovolts per meter (“kV/m”) at one meter above ground level.

Transformers associated with the Project will be enclosed in grounded metal casings, effectively shielding and significantly reducing EMF emissions. Furthermore, the battery side of the system will operate using DC at approximately 50 volts per cell, depending on the selected technology. As described by the National Institute of Environmental Health Sciences,³³ DC electricity does not generate an alternating

³³ National Institute of Environmental Health Sciences. 2002. Electric and Magnetic Fields Associated with the Use of Electric Power. (available from: https://www.niehs.nih.gov/health/materials/electric_and_magnetic_fields_associated_with_the_use_of_electric_power_questions_and_answers_english_508.pdf). Accessed April 2025.

³⁴ McCallum L.C., Whitfield Aslund M.L., Knopper L.D., Ferguson G.M., Ollson C.A. 2014. Measuring electromagnetic fields (EMF) around wind turbines in Canada: is there a human health concern? *Environ Health*. 2014 Feb 15;13(1):9 doi: 10.1186/1476-069X-13-9. PMID: 24529028; PMCID: PMC3943383 (available from: <https://pubmed.ncbi.nlm.nih.gov/24529028/>). Accessed April 2025.

electric field due to its zero-hertz frequency. Instead, it produces a static magnetic field that decays exponentially with distance. Given the relatively low system voltage and spatial configuration, it is anticipated that no measurable magnetic field will be present beyond the Project's fenced boundary.

Typical EMF levels associated with a 115-kV transmission line have been well-documented in industry studies and government reports. Electric field strength directly beneath a 115 kV transmission line typically ranges from 0.3 to 1.5 kV per meter, measured at one meter above ground level. At the edge of the ROW, which is generally between 50 and 75 feet from the centerline, electric fields typically drop to between 0.05 and 0.5 kV/m. These levels are below the electric field exposure limit of 8 kV/m established by the Commission to protect public health and safety. Magnetic field levels under peak load conditions directly beneath a 115 kV transmission line generally range from 10 to 40 mG, with values decreasing rapidly as distance from the line increases. At the edge of the ROW, magnetic fields are typically reduced to between 0.5 and 7 mG. According to the National Institute of Environmental Health Sciences³¹, magnetic fields associated with high-voltage transmission lines commonly range between 20 and 200 mG beneath the lines, depending on current flow. These values are also consistent with data presented in studies by the Electric Power Research Institute and reports prepared for the Minnesota Department of Commerce and Commission.³⁵ Importantly, magnetic fields from transmission lines decrease exponentially with distance, and exposures at publicly accessible locations are typically well below the international public exposure guideline of 833 mG established by the International Commission on Non-Ionizing Radiation Protection.

The nearest occupied residence is approximately 2,000 feet from the proposed electrical equipment (Project substation) with the nearest inverter located 2,025 feet from the occupied residence. At this distance, both electric and magnetic fields would have dissipated to background levels. As such, impacts will be negligible, and no mitigation measures are proposed.

Stray voltage refers to the unintended transfer of electricity between two grounded objects and most commonly results from improperly grounded equipment or faulty utility connections at the distribution level. Stray voltage is generally more of a concern in agricultural environments, where it can affect livestock operations. In industrial areas, the risk is significantly lower due to the absence of sensitive agricultural infrastructure and the more robust electrical system designs typically in place. All electrical components associated with the Project, including inverters and transformers, will be

³⁵ Electric Power Research Institute. EMF Measurement Studies and Technical Reports. Accessed April 2025.

integrated into the regional transmission grid and grounded in full compliance with the National Electric Safety Code. In an industrial setting such as the Project location, adherence to these standards ensures the potential for stray voltage remains negligible. Furthermore, the Project's monitoring systems will actively detect any electrical faults during operation, allowing for immediate identification and correction to maintain safe and reliable performance.

5.2.5.4 ESS Construction and Operational Safety

The safe design and operation of both the substation and the ESS will begin with the selection of certified, safety-tested equipment and full adherence to applicable safety codes, regulatory requirements, and industry best practices. Ongoing advancements in technology, codes and standards, and emergency response protocols have significantly reduced the likelihood of fire-related incidents across all types of electrical generation facilities, including those related to battery thermal runaway events in ESS installations. These improvements have also contributed to minimizing the severity of such events when they do occur. Primary safety considerations include the risk of contact with medium- or high-voltage electrical components, overheating equipment, and the potential for fire.

Impacts and Mitigation Measures

Mitigation measures to minimize the likelihood and potential impacts of these events include:

- Physical spacing of ESS containers from fences and other equipment;
- Using an outside container approach, rather than large inside enclosure that may promote fire spread;
- Site-wide 24/7 remote monitoring;
- Multilevel battery management system;
- Fire resistant bulkhead enclosure design;
- Site and enclosure level fire alarm control panels;
- HVAC for thermal management;
- Heat and smoke detection;
- Automatic stop and response personnel alerts;
- Gas detection and automated ventilation systems;
- Deflagration venting; and
- System-specific training for local fire departments and emergency response teams.

As part of the ESS unit selection discussed in **Section 4.1.1**, the Company has incorporated safety precautions into the preliminary design protocols of the proposed Project. The lithium-ion batteries modeled for the Project will be stored in weather-proof units, similar in size to shipping containers. Each unit includes a fully integrated system of air-cooled or liquid-cooled HVAC for temperature control, sensors, and controls for remote monitoring, and built-in fire, smoke, and gas detection. No off-gassing or air emissions are produced in day-to-day operations. In addition, the Project layout and installation of the equipment will incorporate appropriate spacing to minimize risk of fire propagation between equipment, and between the equipment and surrounding landscape and avoiding the use of enclosures. Transformers and other electrical equipment on site will comply with industry standards to reduce the chance of fire and spill events.

Testing and Certification

All ESS equipment associated with the Project will be designed, constructed, and tested in compliance with industry-recognized standards. Current certifications include Underwriters Laboratories (“UL”) standards UL 1973, UL 9540, and the Institute of Electrical and Electronics Engineers (“IEEE”) Standard 1547. The ESS equipment will also meet or exceed the relevant safety standards applicable at the time of final design, including National Fire Protection Act (“NFPA”) 68 (Explosion Venting), NFPA 69 (Explosion Prevention Systems), and NFPA 855 (Standard for the Installation of Stationary Energy Storage Systems). The Project will further comply with the latest edition of the International Fire Code (“IFC”), the National Electrical Code (NFPA 70), and the guidelines outlined in NFPA 850 (Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations), and IEEE 979 (Guide for Substation Fire Protection).

Any ESS equipment proposed for the Project will undergo the UL 9540A “Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems.” This test evaluates the behavior of the ESS unit during a thermal runaway event, ensuring that the risk of fire propagation is minimized. The testing will be conducted by an independent third-party laboratory recognized by the Occupational Safety and Health Administration’s Nationally Recognized Testing Laboratory program. The test data will include detailed information on the thermal runaway behavior, gas generation, and the composition of any gases produced. These tests provide an industry-standard baseline to assess the hazards associated with the specific battery technology used, ensuring that appropriate safety features are incorporated in line with the requirements of NFPA 855 and the IFC.

The Company is committed to staying up to date with the latest codes, standards, and best practices, ensuring that all equipment vendors and designs comply with the most up-to-date safety and regulatory requirements.

ESS Monitoring and Reporting Systems

The ESS will be equipped with an advanced monitoring system that tracks multiple parameters across various levels of the system. Each ESS unit will feature monitoring points at the cell, module, rack, and system levels, providing real-time data that is integrated into automated control logic within the battery management system and the site controller system. The site controller system will be responsible for ongoing site monitoring. Both the battery management system and site controller will ensure that the ESS components operate within the original equipment manufacturer's specifications and meet warranty requirements. Should any operational limits be exceeded or alarms triggered, the system will automatically respond by sending a fault signal to disconnect the entire battery string from the inverter, or by opening the rack contacts to disconnect individual racks. This real-time, automated monitoring system is designed to promptly detect malfunctions or safety hazards, minimizing the risk of incidents. Additionally, detected faults, abnormal conditions, or gas emissions will be transmitted to remote operators and/or local status indicators.

The Project will house the ESS in separate, modular units rather than a single building or enclosure. This design provides natural segmentation and spatial separation of components, which aids in heat management and significantly reduces the potential for fire propagation. While this configuration requires a larger footprint than a single building or enclosure, it is a critical safety measure that allows for greater isolation between components, enhancing the ability to contain any unlikely incidents. Each unit will be a non-walk-in structure with external access only and will include systems for autonomous thermal management. The typical design of these units will involve sealed battery cells that cannot be accessed from the exterior and are inaccessible to unauthorized personnel. This design ensures that maintenance and installation can occur from the exterior, a crucial safety feature that facilitates emergency access without requiring human entry into the units during normal operations.

The Company will develop a site-specific ERP in coordination with local responders prior to construction of the Project. The ERP will mandate quarterly safety drills for the Project team and the Company will offer annual safety training sessions for local first responders. The ERP will address a wide range of potential emergencies, including fire, medical incidents, and other relevant scenarios, ensuring preparation for various emergency situations at the site.

The ERP will also provide a discussion of the potential for emergencies at the Project to interact with other nearby utility services (Blue Lake Substation, Blue Lake Peaking Plant, and Magellan valve site). In the event of an emergency, there is a significant potential for interaction between the ESS and neighboring utility infrastructure, which could escalate hazards if not properly managed. To mitigate this potential, the ERP will outline coordinated response protocols including real-time communication channels and joint assessments with nearby utility facility operators. Cross-training exercises will be conducted to confirm that all personnel, both from the Project and adjacent utilities, are familiar with each other's systems, response roles, and safety procedures. This collaborative approach will enhance situational awareness, reduce response times, and support a unified effort to contain and resolve emergencies effectively.

5.2.6 Noise

Noise is defined as unwanted or disruptive sound and typically consists of a mix of frequencies and intensities. Sound levels are measured in decibels (“dB”) using a logarithmic scale, which reflects how the human ear perceives changes in loudness. Because human hearing is not equally sensitive across all frequencies, sound is often measured using A-weighting (“dBA”), which adjusts for the frequencies to which the human ear is most responsive. In industrial environments, ambient noise levels are generally elevated due to the presence of machinery, vehicle traffic (including heavy trucks), HVAC systems, loading and unloading operations, and other equipment commonly associated with manufacturing or logistical activities. Changes in sound level of approximately 3 dBA are typically just perceptible to the average person. A 5 dBA increase is clearly noticeable, and a 10 dBA increase is generally perceived as a doubling of loudness. An increase of 20 dBA is considered a substantial change in the acoustic environment. **Table 5.2-2** below shows noise levels associated with common, everyday sources.

Table 5.2-2: Common Noise Sources and Levels³⁶

Sound Pressure Level (dBA)	Subjective Evaluation	Noise Source
140	Deafening	Jet Engine (at 25 meters)
130	Threshold of Pain	Jet Aircraft (at 100 meters)
120	Threshold of Feeling	Rock and Roll Concert

³⁶ MPCA. 2008. A Guide to Noise Control in Minnesota Acoustical Properties, Measurement, Analysis and Regulation. (available from: https://www.leg.mn.gov/docs/2015/other/150681/PFEISref_2/MPCA%202008a.pdf). Accessed April 2025.

110	Very Loud	Pneumatic Chipper
100		Jointer/Planer
90	Moderately loud	Chainsaw
80		Heavy Truck Traffic
70	Loud	Business Office
60	Moderate	Conversational Speech
50	Quiet	Library
40		Bedroom
30	Very Quiet	Secluded Woods
20		Whisper

Description of Existing Noise Sources

Existing sources of background noise in the Project vicinity include the Blue Lake Peaking Plant, Blue Lake Substation, traffic on U.S. Highway 169 and local roads, railroads, industrial equipment/operations, wind, vehicle traffic, birdsong, and residences. Based on an ambient sound study conducted in 2022, the average nighttime ambient sound levels at the two nearest residents to the Project was approximately 70 dBA L50. See **Appendix F**.

In Minnesota, noise standards are based on noise area classifications (“NAC”) corresponding to the location of the listener, referred to as a receptor. NACs are assigned to areas based on the type of land use activity occurring at that location. Household units, designated camping and picnicking areas, resorts and group camps are assigned to NAC 1; recreational activities (except designated camping and picnicking areas), parks, railroad terminals, and commercial areas are assigned to NAC 2; manufacturing, highways, utilities, and related activities are assigned to NAC 3. A complete list is available at Minn. R. 7030.0050.

Noise standards are expressed as a range of permissible dBA over a one-hour period. L10 may be exceeded 10 percent of the time, or six minutes per hour, while L50 may be exceeded 50 percent of the time, or 30 minutes per hour. Standards vary between daytime and nighttime hours. There is no limit to the maximum loudness of a noise. **Table 5-2.3** provides current Minnesota noise standards.

Table 5.2-3: Applicable Minnesota Noise Standards³⁶³⁶

Noise Area Classification		Noise Standard, dB(A)			
		Daytime (7 am to 10 pm)		Nighttime (10 pm to 7 am)	
		L50	L10	L50	L10
1	Residential	60	65	50	55
2	Commercial	65	70	65	70
3	Industrial	75	80	75	80

Noise modeling of a constant sound source represents the equivalent sound level (“Leq”), which is the overall average of a measurement period. The modeled Leq is generally compared to the L50 sound level limits as the Leq and L50 are the mean and median sound levels, respectively, measured over a given hour. The use of L50 limit is appropriate for an ESS facility based on the continuous operation of the facility when active. The visual relationship between the Leq, L10, and L50 metrics is shown on **Figure 7.**³⁷

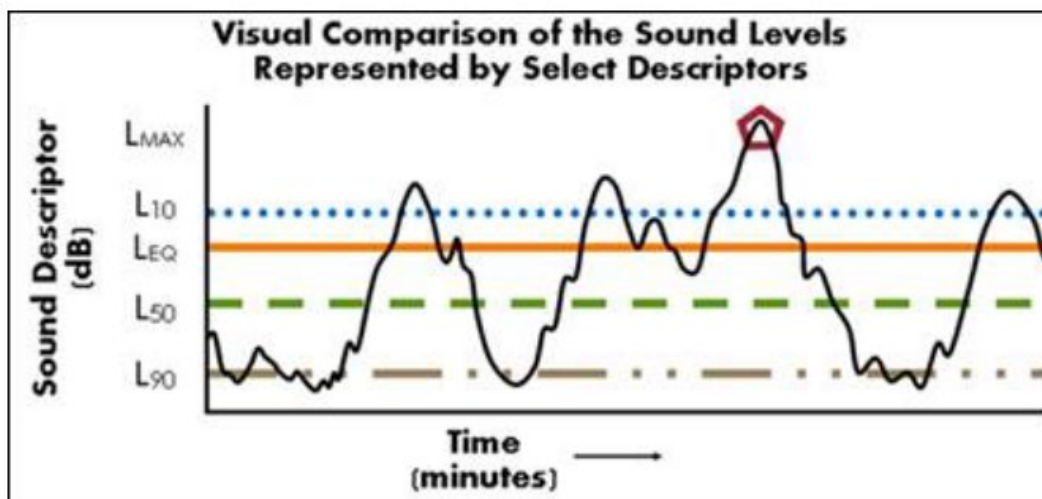


Figure 7: Comparison of Sound level Metrics³⁷³⁷

³⁷ Federal Highway Administration. 2017. Sound Level Descriptors. (available from: <https://www.fhwa.dot.gov/environment/noise/resources/fhwahep17053.pdf>). Accessed April 2025.

Projected Operational Sound Levels

The primary noise sources with the Project include the power transformer in the substation, inverters, and the cooling system in the cabinets. These systems generate noise during active system operation or power transfer into and out of the ESS. Project noise levels were predicted using CADNA-A, a noise modeling software in conformance with International Organization for Standardization 9613-2, 2024 Attenuation of Sound During Propagation Outdoors – Part 2: General method of calculation (**Appendix F**). Continuous operation was assumed to represent the variable timing of ESS operation. The ESS units were modelled with a 102 dBA sound power level per manufacturer specifications.

Potential noise sensitive receptors/areas near to the Project (i.e., nearest receptors) are homes. Household units are classified under NAC-1 per Minn. R. Chapter 7030.0050, subp. 2. Ambient measurements were collected at the two nearest residential properties to the south of the Project as part of the Blue Lake Peaking Plant expansion in 2022. The sound level measurements were collected to establish the existing ambient sound levels in the area of the nearest residential properties, as identified in Figure A-1 of **Appendix F**. The ambient nighttime sound levels measured at nearby residences were 64 and 70 dBA. Both of the measured locations were in a residential area south of US 169, and highway traffic noise was the largest contributor to noise in the area.

Impacts and Mitigation Measures

ESS facilities potentially operate at all hours of the day. Project noise modeling sound levels were compared to the nighttime noise level limits, as those are the most restrictive. Results of the modeling are shown in **Table 5.2-4** and predict compliance with the nighttime limit of 50 dBA L50 set forth for NAC-1 in Minn. R. Chapter 7030 (**Appendix F**).

Table 5.2-4: Noise Modeling Results

Receiver Location	Receiver Description	MPCA Sound Level Limit (L50 dBA)	Modeled Project Sound Level (dBA)
MP1	Residence	50	50
MP2	Residence	50	50

As designed and as modeled with the 102 dBA sound power level integrated ESS unit, predicted nighttime noise levels do not exceed the nighttime limits of 50 dBA L50 for NAC-1. As noted above, nighttime noise level limits for NAC-1 are the most restrictive. The modeled noise for operation of the Project complies with all noise regulations at the state level. Because the Project modeled noise is at 50 dBA, below the existing

ambient sound levels of 64 and 70 dBA measured at nearby residences primarily from highway traffic noise, the Project is not expected to be a significant contributor to increases in total sound levels in the area and should be relatively imperceptible relative to surrounding ambient conditions, and no mitigation measures are proposed for Project operations. For these reasons, common mitigation or attenuation measures (noise baffles, operation curtailment, sound wall, etc.) are not being considered.

The Project will create intermittent noise during construction, and the resulting noise impacts will be temporary. Additionally, Project construction noise will likely be similar to noise emitted from existing industrial operations in the area and will vary from day to day. The Company will mitigate noise impacts by limiting construction to daytime hours to the extent practicable and ensuring that equipment/vehicles are operated with properly functioning mufflers and noise-control devices.

5.2.7 Public Services and Infrastructure

This section describes the public services and infrastructure in the vicinity and impacts the Project may have on public services. Public services are those typically provided by a government entity to its citizens and that are used to benefit public health and safety.

Transportation

The Project's southern boundary is adjacent to U.S. Highway 169, though no access to the site is available from U.S. Highway 169. Other roads that surround the site are County or City roads. The nearest local road is 70th Street South, which is located immediately west of the site.

MnDOT conducts traffic counts on roads in Minnesota.³⁸ Based on 2023 data, the highest existing Annual Average Daily Traffic ("AADT") for roads near the Project is 60,640 vehicles per day along U.S. Highway 169; traffic volumes along county and township roads range from 1,450 to 30,382 vehicles per day. Traffic volume data for roads near the Project are provided in **Table 5.2-5**.

³⁸ MnDOT. n.d. Traffic Mapping Application. (available from: <https://mndot.maps.arcgis.com/apps/webappviewer/index.html?id=7b3be07daed84e7fa170a91059ce63bb>). Accessed April 2025.

Table 5.2-5: Existing Daily Traffic Levels³⁸

Roadway	Roadway Segment	Year	AADT
US Highway 169	East of County Rd. 21	2023	60,640
US Highway 169	East of Stagecoach Rd	2023	45,338
Highway 101	Northwest of US 169	2022	30,382
Highway 101	West of County Rd. 21	2019	25,500
Valley Park Drive	South of Park Place	2022	7,110
Stagecoach Road	North of 13th Ave	2020	1,450

The anticipated access point to the Project will be off the existing road to the Blue Lake Substation, 70th Street South. No alternate access routes are being considered at this time.

No railroads are located within the site. The Chicago Milwaukee Saint Paul and Pacific Railroad is located adjacent to the Project’s northern boundary, generally running north to south.³⁹ The Project is designed to avoid railroad property or ROWs.

Emergency Services

The Project is in Scott County which, according to the U.S. Census Bureau’s QuickFacts website, has a population density of 423.6 persons per square mile of land area.⁴⁰ The City of Shakopee has a population density of 1,536.3 persons per square mile.⁴⁰ If emergency personnel were needed at the Project, multiple agencies would likely respond, depending on the situation. These include, but are not limited to, the City of Shakopee police department, City of Shakopee fire department, and Mdewakanton Public Safety Department. The Shakopee police and fire departments are located within six miles of the Project.

Ambulance response is provided by regional and local ambulance services. The primary ambulance service for the area is the Allina Health Emergency Medical Services in Scott

³⁹ MnDOT. 2022. Minnesota Rail Viewer Application. (available from: <https://www.arcgis.com/apps/webappviewer/index.html?id=5640f575a86148039704660c29126f24&extent=-11690507.5359%2C5234420.4958%2C-9081864.6346%2C6507555.6389%2C102100>). Accessed April 2025.

⁴⁰ U.S. Census Bureau. 2020. QuickFacts (available from: <https://www.census.gov/quickfacts/fact/table/US/PST045224>). Accessed April 2025.

County.⁴¹ Hospitals near the Project include St. Francis Regional Medical Center and Fairview Ridges Hospital, which are in Shakopee and Burnsville, respectively. Both facilities are within 15 miles of the Project.⁴²

Local Utilities

The City of Shakopee obtains its municipal water supply from a network of deep groundwater wells that draw from the Prairie du Chien–Jordan aquifer system, a geologic formation known for its high-yield and relatively high-quality groundwater.⁴³ This aquifer is part of a regional system that supplies water to many communities throughout the Twin Cities metropolitan area. Shakopee’s municipal water utility operates multiple wells, each ranging in depth from approximately 400 to 700 feet, with the water undergoing treatment for iron and manganese removal before public distribution.

The City of Shakopee manages its municipal wastewater through a centralized collection and treatment system that is part of the regional infrastructure operated by the Metropolitan Council Environmental Services.⁴⁴ Wastewater is conveyed through a network of sanitary sewer pipes to the Blue Lake Wastewater Treatment Plant, located in neighboring Shakopee Township.

No wells or septic fields are present in the site based on MDH records⁴⁵ and MPCA records.⁴⁶

⁴¹ Minnesota Emergency Medical Services Regulatory Board. 2024. Ambulance Primary Service Areas for Minnesota (available from: https://experience.arcgis.com/experience/a222fe7ceaf44f868ec3c0f5dafa8446#data_s=id%3Adata%20Source_2-187fc07a297-layer-2%3A1620). Accessed April 2025.

⁴² MN Geospatial Commons. 2020. Hospitals Serving Minnesota (available from: <https://gisdata.mn.gov/dataset/health-facility-hospitals>). Accessed April 2025.

⁴³ Shakopee Public Utilities. 2025. (available from: <https://shakopeeutilities.com/>). Accessed April 2025.

⁴⁴ City of Shakopee. 2025. Sanitary Sewer. (available from: <https://www.shakopeemn.gov/government/departments/public-works/sanitary-sewer>). Accessed April 2025.

⁴⁵ MDH. 2025. Minnesota Well Index. (available from: <https://www.health.state.mn.us/communities/environment/water/mwi/index.html>). Accessed April 2025.

⁴⁶ MPCA. 2025. Subsurface Sewage Treatment System Search. (available from: <https://www.pca.state.mn.us/business-with-us/septic-systems>). Accessed April 2025.

Regional Utilities

The National Pipeline Mapping System (“NPMS”) was searched to assess whether pipelines are present in the site and nearby vicinity.⁴⁷ NPMS pipeline data consists of gas transmission pipelines and hazardous liquid pipelines jurisdictional to the Pipeline and Hazardous Materials Safety Administration. One natural gas pipeline, owned by Magellan, is located within the site, but outside of the Preliminary Development Area.⁴⁷ The NPMS identified one other pipelines within one mile of the site, a natural gas pipeline is mapped west where it terminates into the Blue Lake Peaking Plant (owned by the Company).⁴⁷ An inactive underground pipeline travels under the site from the Magellan valve site to the Blue Lake Peaking Plant.

There are ten transmission lines mapped within the site, all connecting to the Blue Lake Substation.⁴⁸ Lines range in voltage capacity from 345 kV (six of the 10 identified lines) to 100-161 kV (two of the 10 lines). The remaining two lines consist of a gen-tie line to the Blue Lake Peaking Plant, as well as an additional 220-287 kV line (**Figure 2**).⁴⁸

Public Communications

Landline telephone service in the area is provided to residences and businesses by Qwest Corporation.⁴⁹ Mobile service in the area is provided by many carriers, including AT&T, T-Mobile, and Verizon. Cable service providers include Spectrum, Mediacom, and Xfinity. Other services that are operating in Scott County, such as fiber, fixed wireless, satellite, and DLS, include: BEVCOMM, CenturyLink, Consolidated Communications, Frontier, Nuvera, TexStar Communications, Velocity Telephone, NetWave Broadband, NorthfieldWiFi, Radio Link Internet, Xtratyme Technologies,

⁴⁷ NPMS. 2024. NPMS - Public Viewer. (available from: <https://pvnpmns.phmsa.dot.gov/PublicViewer/>). Accessed April 2025.

⁴⁸ Homeland Infrastructure Foundation Level Data. 2023. Transmission Lines. (available from: https://atlas.eia.gov/datasets/bd24d1a282c54428b024988d32578e59_0/explore?location=44.787933%2C-93.418886%2C14.58). Accessed April 2025.

⁴⁹ DOC. 2023. Minnesota Telephone Exchange Boundaries. (available from: <https://minnesota.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=a61fe43236994d43b097d439befb8e70>). Accessed April 2025.

HughesNet, KM Telecom, LTD Broadband, MiBroadband, Starlink, T-Mobile, Verizon, and Viasat.^{50,51}

Emergency Communications

There are communication towers that are part of the Allied Radio Matrix for Emergency Response (“ARMER”) in Scott County.⁵² These ARMER towers are a part of Minnesota’s Statewide Communication Interoperability Plan, which aims to improve communication for emergency responders. The ARMER radio system operates by line of sight, talking to other ARMER towers. For the system to operate effectively, multiple towers are needed to produce a solid blanket of coverage. The system can be interrupted if tall objects are proposed within the line-of-sight, typically at or near the top of a tower over 150 feet tall.

Regional Landfill

The Dem-Con Shakopee Landfill serves Scott County as a location for mixed municipal solid waste, ash, and construction and demolition debris. The landfill is located approximately ten miles southwest of the site at 3230 130th St W, Shakopee, MN 55379.⁵³

Construction solid wastes will likely be disposed of at the Dem-Con Shakopee Landfill, in coordination with facility staff. Minimal construction solid wastes are anticipated.

Details of landfill services and capacity are addressed in the preliminary Decommissioning Plan (**Appendix E**).

⁵⁰ MN DEED. 2023. Minnesota Broadband Providers by County. (available from: https://mn.gov/deed/assets/providers-county_tcm1045-190762.pdf). Accessed April 2025.

⁵¹ MN DEED. 2023. The Minnesota Broadband Map. (available from: <https://gis.connectednation.org/portal/apps/webappviewer/index.html?id=a2d243ccf7e547eba2ec0d5c80c80917>). Accessed April 2025.

⁵² MDH. 2022. ARMER Radio System. (available from: <https://www.health.state.mn.us/communities/ep/taccomm/armerradio.html>). Accessed April 2025.

⁵³ Scott County. 2023. Local Recycling and Waste Disposal Options. (available from: <https://www.scottcountymn.gov/DocumentCenter/View/21374/Local-Recycling-and-Waste-Disposal-Option?bidId=>). Accessed April 2025.

Impacts and Mitigation Measures

Transportation

Regional access to the Project from the east or west will be via existing U.S. Highway 169, County, and City roads to the existing access road (70th Street South) off County Road 101. The roads used for access to the Project are illustrated in **Figure 2**. During the construction phase, temporary impacts are anticipated on some public roads within the vicinity of Project facilities, primarily through additional traffic and slow-moving construction vehicles. These impacts are expected to be short term and minor.

Construction traffic will use the existing roadway system to access the Project facilities and deliver construction materials and personnel. Truck traffic during construction is estimated to be approximately five truck trips/day during site preparation, 15 truck trips/day during the ESS installation, and three truck trips/day during the mechanical/electrical/commissioning stage. Semitruck delivery will vary per day depending on the time of construction and delivery timeline of equipment. Overweight or oversized loads are unlikely. If they are required, the Company will obtain the appropriate approvals from state and local agencies prior to construction. It is anticipated that there will be an average of 30 workers on site during the construction period, with a maximum of 55 workers for limited periods. These workers will generate an average of 15-35 pickup or car trips per day based on limited ride share or carpooling (**Appendix H**).

The increased traffic may be perceptible to area residents, but the slight increase in volume is not expected to affect traffic function. Slow-moving construction vehicles may also cause delays on smaller roads. However, these delays should be minimal for the relatively short construction delivery period.

After construction is complete, traffic impacts during the operations phase of the Project will be negligible. A small maintenance crew driving through the area in pickup trucks on a regular basis will monitor and maintain the facilities as needed, but traffic function will not be impacted as a result.

No railroads are located within the site and therefore will not be impacted. The Project is designed to avoid the railway located along the northern boundary which will mitigate any potential permanent impacts. Project construction is not expected to create any temporary impact of railway operations from travel along 70th Street South. Any delays resulting from railway traffic will be handled by the EPC.

Emergency Services

Construction and operation of the Project will have minimal impacts on the security and safety of the local populace. As requested by the City of Shakopee, the Company is providing a Project information sheet regarding fire suppression practices and ERP that the City of Shakopee will provide to the local emergency responders (see **Section 5.2.5**). A formal training session with local emergency responders regarding the ERP is planned prior to construction commencing.

Fire department response and safety planning for an ESS is a critical component of ensuring the safe operation of energy infrastructure. In general, ESS facilities are comprised of equipment that pose limited dangers under normal conditions of use by trained personnel. The Company will implement best practices for safety during the construction and operation of the Project. However, ESS facilities can pose unique challenges to first responders, including risks associated with thermal runaway, toxic gas emissions, and high-voltage equipment. The Company is working with local first responders to develop a site-specific ERP. This plan will include detailed procedures for fire suppression, hazardous material response, and site access protocols. Local fire departments will be provided with system schematics, access training, and personal protective equipment recommendations, and may participate in joint safety drills to ensure preparedness. These coordinated efforts between the Company and emergency services enhance the ability to respond quickly and safely to any potential fire-related event. The company and its contractors will follow established industry safety procedures during and after construction of the Project; these include clear signage during all construction activities and fencing of all Project facilities to prevent public access.

Local and Regional Utilities

The Company will coordinate with Gopher State One Call before and during construction to fully understand infrastructure locations and safety concerns and to avoid possible structural conflicts. The Company will also conduct an American Land Title Association survey to identify the locations of underground utilities beyond the identified Magellan inactive pipeline. Final Project design will minimize and avoid impacts to underground utilities, including the active Magellan natural gas pipeline; if conflicts are unavoidable, the Company will coordinate with the utility to develop an approach to reroute or otherwise protect the utility. Underground utilities will be marked prior to construction start. The Project will impact existing utilities during the interconnection of the new Project substation with the existing Blue Lake Substation. To accommodate this interconnection, several critical upgrades are required at the existing substation to ensure compatibility and continued reliability and safety. These upgrades typically include the installation of new protective relays and communication

systems to coordinate with the storage facility, as well as the expansion of switchgear and transformer capacity to handle increased power flow and bidirectional energy exchange. Modifications to control and SCADA systems are also necessary to enable real-time monitoring and integration with grid operations. Additionally, structural enhancements such as updated bus configurations and the addition of new breakers or disconnects may be needed to support the revised load dynamics and ensure compliance with interconnection and utility standards and requirements.

The construction process will not involve groundwater withdrawal or construction within the regional aquifer, no impacts to regional water wells will occur.

Public Communications

The Project will not be located within public communication infrastructure nor interfere with public communication signals. Accordingly, the Project will not impact existing communication utilities and no mitigation is proposed.

Emergency Communications

The Project will not impact the ARMER communication system as Project facilities are proposed well below the typical height of a tower and line-of-sight near the top of these towers (i.e., greater than 150 feet above ground). The Company expects the tallest ESS units to be up to 12 feet above ground and Project substation facilities to be less than 30 feet tall. The tallest portion of the Project is anticipated to be the 90-foot-tall poles for construction of the gen-tie. All facilities are expected to be less than 150 feet in height; as such, no mitigation is necessary.

Regional Landfill

Construction waste and equipment packaging waste will be managed by the general contractor. It is expected that this material will be disposed of or recycled at the Dem-Con Landfill located less than 10 miles southwest of the Project. The construction waste volume anticipated for this Project can easily be accommodated by this facility as part of its daily operation through the use of roll-off containers or on-site receptacles. Details on the decommissioning and recycling of the Project and associated materials are addressed in the preliminary Decommissioning Plan (**Appendix E**).

5.2.8 Land Use and Zoning

The Project is sited within the City of Shakopee in Scott County, Minnesota. Per Minn. Stat. § 216E.10, subd. 1, the Site Permit supersedes and preempts “all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local, and special purpose government.” Thus, no zoning or land use permits are required for

construction of the Project from Scott County or City of Shakopee, although the review by the Commission will take local land use ordinances and zoning into consideration. See **Section 1.4.2** regarding the Site Permit and preemption of local permits and zoning.

Land Use and Land Cover

The Project is located in an industrial area in the northeast portion of the City of Shakopee’s jurisdiction. The current land use of the site is industrial and barren land.¹

As shown in **Map 5**, the predominant land cover is dry oak savanna barrens subtype comprising about 27.1% of the Project site, followed by dry prairie barrens (26.1%), and 11% to 25% impervious cover with perennial grasses (21.4%).⁵⁴ Remaining land uses consist of grasslands, woodlands, pavement and sand/gravel pits. The areas of dry oak savanna and other woodlands are associated with sparsely populated tree species in the northern portion of the Project site. With exception to the existing substation, much of the remaining lands in the Project site consist of barren lands with sparse vegetation. The Minnesota Land Cover Classification System (“MLCCS”)⁵⁴ above incorporates more detailed land cover information, including human-modified cover classifications. Land cover acreages and percentages are listed in **Table 5.5-6** in **Section 5.5.6**.

Zoning and Comprehensive Plan

Zoning laws are enacted to implement land use plans and goals for orderly development and to promote and protect the health, safety and welfare of the community and its residents. The City of Shakopee Zoning Map shows the Project within the I-1 (**Map 3**).¹¹ The City of Shakopee Zoning Ordinance (Chapter 151 of the City Code) established the I-1 to provide an area for industrial, light manufacturing, and office uses which are generally not obtrusive and which serve as a transition between more intensive industrial sites and residential and business land uses.⁵⁵

Neither the City of Shakopee nor Scott County have regulations specific to ESS projects within their zoning ordinances. Accordingly, the Company applied the general structure setback requirements applicable to the area in which the Project will be located (**Table 3.3**).

⁵⁴ MnDNR. 2024. Land Cover - Minnesota Land Cover Classification System. Minnesota Geospatial Commons GIS Download. (available from: <https://gisdata.mn.gov/dataset/biota-landcover-mlccs>). Accessed April 2025.

⁵⁵ City of Shakopee. 2018. City Code of Ordinances – Chapter 151. (available from: [https://shakopee.municipalcodeonline.com/book?type=ordinances#name=151.045_Light_Industry_Zone_\(I-1\)](https://shakopee.municipalcodeonline.com/book?type=ordinances#name=151.045_Light_Industry_Zone_(I-1))). Accessed April 2025.

The Company reviewed the City of Shakopee's 2040 Comprehensive Plan – Envision Shakopee²⁴, during preparation of the Project design. Envision Shakopee is meant to serve as a tool for the City Council, the Planning Commission, city staff and other government entities as they consider priorities and make decisions regarding public policy, public investments and private development proposals. Envision Shakopee is also intended to serve as a plan for the residents of Shakopee and the wider Shakopee community. Envision Shakopee promotes a diversified and connected land use pattern that integrates residential, commercial, and recreational areas through mixed-use development and the flexible application of Planned Unit Developments. This approach is intended to enhance walkability, reduce automobile dependency, and support innovative site designs aligned with community goals. The City also prioritizes the preservation of agricultural land through designated Agricultural Preservation Zones and ensures that zoning ordinances are explicitly aligned with the comprehensive plan to reinforce its implementation. Notably for Project development, Envision Shakopee incorporates goals tied to renewable energy and sustainability. Solar energy systems are permitted as accessory uses in all zoning districts, thereby supporting broader adoption of clean energy technologies. Additionally, the plan encourages sustainable building practices within planned unit developments, including on-site renewable energy systems and zero-net-energy or zero-carbon design principles.²⁴

Conservation of natural resources is another key focus of Envision Shakopee, with provisions for guiding development based on natural resource inventories that protect vital ecosystems such as groundwater reserves and mature tree cover. Particularly, screening of industrial developments is mentioned as a means of providing aesthetically pleasing areas in conjunction with conserving vegetated areas.

Envision Shakopee outlines a strategic vision for industrial land use and economic development, emphasizing the City's role in the evolving industrial landscape.²⁴ Shakopee boasts a robust manufacturing sector and aims to position itself within an "advanced economy corridor." This involves marketing its existing industrial base, fostering connections between key areas like Valley Green and Downtown, and promoting the West End for next-generation advanced manufacturing. Envision Shakopee emphasizes the importance of aligning utility services with the City's growth patterns, promoting infill development, and optimizing the use of existing infrastructure to enhance fiscal sustainability. Overall, the comprehensive plan integrates industrial and utility land uses with broader economic and infrastructural strategies, positioning Shakopee as a dynamic and adaptable player in the regional economy. As feasible, the Company has designed the Project to be consistent with the goals and policies of the Utilities Area designation in Envision Shakopee.²⁴

Scott County has adopted the Multi-Hazard Mitigation Plan⁵⁶ and Scott County 2040 Comprehensive Plan.²³ The Multi-Hazard Mitigation Plan is put in place to assist with planning for potential hazardous events within Scott County, including tornadoes, flooding, wildfires, blizzards, straight-line winds, ice storms, and droughts.⁵⁶ Similarly to Envision Shakopee, the Scott County 2040 Comprehensive Plan is a planning document intended to manage the pace, location, and impacts of growth and development in a manner consistent with the philosophy of Scott County. The Scott County 2040 Comprehensive Plan shows the Project site is within the City of Shakopee, which is noted as *Not Under County Planning Authority*.²³

These plans and their years adopted can be found in **Table 5.2-6** below.

Table 5.2-6: Comprehensive Plans Covering the Project Site and Surrounding Region

Comprehensive Plan	Governing Body Responsible for Plan	Year Adopted
City of Shakopee 2040 Comprehensive Plan (Envision Shakopee)	City of Shakopee	2019
Multi-Hazard Mitigation Plan	Scott County	2021
Scott County 2040 Comprehensive Plan	Scott County	2019

Impacts and Mitigation Measures

Because the Project is considered an ESS and is permitted by the Commission, no zoning or land use permits are required from Scott County or City of Shakopee. The Company sited and designed the Project, taking into account the County’s land use goals, setbacks, in addition to state requirements as discussed in **Section 4.2.1**. The Company plans to continue coordinating with the local jurisdictions to ensure compliance with other potential permits necessary for the Project, such as road use or driveway permits. The Project’s impacts to industrial lands in the City of Shakopee are minimal and will have limited impact on the developed nature of the region.

The Project will change land use at the site for the operating life of the Project (anticipated to be 20 years). No permanent land use impacts are anticipated, since the Company will restore the site to natural land uses or any other appropriate land uses.

⁵⁶ Scott County. 2021. Multi-Hazard Mitigation Plan. (available from: <https://www.scottcountymn.gov/DocumentCenter/View/12800/2021-Scott-County-Multi-Hazard-Mitigation-Plan?bidId=>). Accessed April 2025.

Because no permanent land use impacts are anticipated, no additional mitigation measures are proposed.

5.2.9 Recreation

The City of Shakopee offers a diverse range of recreational activities throughout the year. Outdoor enthusiasts can explore the extensive trail systems ideal for hiking and biking, including routes that connect to the scenic Minnesota Valley State Recreation Area, which also supports birdwatching, horseback riding, and access to the Minnesota River. Shakopee's park system encompasses more than 1,100 acres, with popular destinations such as Lions Park, Quarry Lake Park, and Huber Park, the latter featuring a riverside amphitheater that hosts seasonal performances and events.⁵⁷ Quarry Lake Park also provides opportunities for fishing, paddleboarding, kayaking, and even scuba diving.⁵⁸

During the warmer months, residents and visitors visit Valleyfair, one of Minnesota's largest amusement parks, as well as the Shakopee Aquatic Park, which offers a lazy river, water slides, and a zero-depth entry pool. In winter, recreation shifts to ice skating and hockey at local outdoor rinks and the Shakopee Ice Arena, along with cross-country skiing and snowshoeing on the city's trails. The Shakopee Community Center is a year-round hub for wellness and activity, housing a fitness center, indoor walking track, aquatic facilities, and an indoor playground. Regional camping is limited near the site with nearby public campgrounds being 5-15 miles from the Project site.

There are no MnDNR SNAs, WMAs, state water trails, walk-in access program sites, Aquatic Management Areas, Fishery Management Areas, state parks, or state forests within or adjacent to the site (**Map 6**).

The Project is within one mile of a state trail, snowmobile trail, city parks (Quarry Lake Park and collection of Southbridge Parks), and the Minnesota Valley National Wildlife Refuge (**Map 6**).⁵⁹

The Minnesota Valley National Wildlife Refuge is described as a thriving urban refuge, connecting people, communities, and wildlife through educational and recreational

⁵⁷ City of Shakopee. 2025. Parks & Trails. (available from: <https://www.shakopeemn.gov/recreation/parks-trails>). Accessed April 2025.

⁵⁸ City of Shakopee. 2025. Quarry Lake Park. (available from: <https://www.shakopeemn.gov/recreation/recreation-facilities/quarry-lake-park>). Accessed April 2025.

⁵⁹ MnDNR. 2025. Recreation Compass. (available from: <https://www.dnr.state.mn.us/maps/compass.html>). Accessed April 2025.

opportunities.⁶⁰ The tallgrass prairie, floodplain forests and wetlands found within the refuge provide exceptional opportunities to find iconic and rare species of plants, birds, insects and freshwater mussels. With more than 45 miles of trails open to hiking, biking, snowshoeing and cross-country skiing, the Minnesota Valley National Wildlife Refuge is a valuable recreational resource near the Project. The Minnesota Valley State Trail extends throughout the National Wildlife Refuge, ending just north of the site. This trail is also used as a snowmobile trail throughout the winter.

Other recreational areas in proximity to the Project include Quarry Lake Park and a collection of Southbridge Residential Parks. Quarry Lake Park, which borders the site to the west, is a 111-acre park containing a quarry lake used for predominantly fishing and water sports.⁵⁸ Several mountain bike trails are present, including a trail immediately adjacent to the western boundary of the Project site. Southbridge Residential Parks are generally comprised of open space in the residential neighborhood south of US 169.

Impacts and Mitigation Measures

The Company or its contractors will install signs and fencing will as needed to inform and protect the public from entering the Project, particularly along the western boundary adjacent to Quarry Lake Park. The construction phase may be a temporary visual, auditory, and aesthetic impact to some visitors and local residents. Mitigation measures to reduce operational impacts to Quarry Lake Park include vegetative screening efforts to mask the Project from viewpoints at Quarry Lake Park via shrub and tree screening along 70th Street South. Screening with trees and shrubs is intended to preserve the ecological character of the park while enhancing the visual transition between industrial and recreational land uses. The screening strategy would involve a multi-layered planting design consisting of native deciduous and coniferous tree species, including smaller shrubs, arranged to maximize year-round opacity.

5.2.10 Socioeconomics

Socioeconomic information for the Project vicinity is based on data from the U.S. Census Bureau's Explore Census Data website.⁶¹ The discussion herein does not address every socioeconomic metric but instead addresses the most applicable statistics related to the Project. The socioeconomic statistics that best characterize the demographic and economic context of the Project vicinity and represent the

⁶⁰ USFWS. 2025. Minnesota Valley National Wildlife Refuge. (available from: <https://www.fws.gov/refuge/minnesota-valley>). Accessed April 2025.

⁶¹ U.S. Census Bureau. 2020. Explore Census Data. (available from: <https://data.census.gov/>). Accessed April 2025.

socioeconomic characteristics that potentially could be affected by construction and operation of the Project include total population, vacant housing units, per capita income, percentage of the population below poverty level, and unemployment rate (Table 5.2-7).⁶¹

Table 5.2-7: Population and Economic Characteristics⁶¹

State/ County	Total Population	Total Vacant Housing Units	Median Household Income	Persons Living Below the Poverty Level (%)	Unemploy- ment Rate
Minnesota	5,706,494	230,500	\$85,086	9.3%	3%
Scott County	150,928	2,013	\$106,181	5.7%	2.6%
City of Shakopee	43,698	656	\$110,989	5.1%	3.6%

The Scott County population is comprised of 77.7% White, followed by 6.6% Asian, 6.0% Hispanic or Latino, 5.4% Black or African American, with the remaining 4.3% consisting of American Indian, Native Hawaiian/Other Pacific Islander, and other origins.¹⁵ The City of Shakopee population is 65.3% White, followed by 11.8% Asian, 9.42% Black or African American, 9.17% Hispanic or Latino, and the remaining 4.3% consisting of American Indian, Native Hawaiian/Other Pacific Islander, and other origins.¹⁶

The Project is in a light industrial zone in the City of Shakopee, Minnesota.¹¹

The median household income of the City of Shakopee is \$110,989, higher than that of Scott County (\$106,181), or Minnesota (\$85,086).¹⁷

The City of Shakopee has a lower portion of its population living in poverty (5.1%) than either Scott County (5.7%) or Minnesota (9.3%).¹⁶

The unemployment rate in Scott County (2.6%) is lower than the state average of 3%, with the City of Shakopee having a higher unemployment rate than both at 3.6%. The primary industries in the City of Shakopee are classified as:

1. Educational services, healthcare, and social assistance (19.5%);
2. Manufacturing (15.7%); and

3. Retail trade (13.2%).⁶²

Approximately 2,013 vacant housing units exist in Scott County and 656 vacant housing units in the City of Shakopee. According to the Discover Shakopee website, 12 hotels and motels and seven campground/recreational vehicle lots with over 350 sites are available in the Shakopee area.⁶³

Impacts and Mitigation Measures

The Project will provide socioeconomic benefits to the local governments and communities. As stated in **Section 4.3.1**, the Project will create approximately 80 jobs during the peak construction and installation phases (approximately 9-12 months), and three full-time jobs during the operations phase (20 years). Construction of the ESS would provide temporary increases to the revenue of the area through increased demand for food services, fuel, transportation, and general supplies. Procurement of construction resources will give preference to women, veteran, and minority owned business contractors. The Project will also create new local job opportunities for various trade professionals that live and work in the area and it is typical to advertise locally to fill required construction positions. The Company will utilize union labor to construct the Project. Use of union labor will ensure the payment of prevailing wages for construction workers, typically ranging from \$30 to \$45 dollars an hour based on different trades. Opportunity exists for sub-contracting to local contractors for gravel, fill, and civil work. Additional personal income will also be generated by circulation and recirculation of dollars paid out by the Project as business expenditures and state and local taxes.

General skilled labor is expected to be available in Scott County or Minnesota to serve the Project's basic infrastructure and site development needs. Specialized labor will be required for certain aspects of the Proposal. The workforce needed to construct an ESS facility must be comprised of Minnesota licensed electricians because most of the assembly and wiring work for ESS installations is considered electrical work under the Minnesota State Electrical Code.

⁶² U.S. Census Bureau. 2023. Selected Economic Characteristics. 2023: ACS 5-Year Estimates Data Profiles, Table DP03. (available from: <https://data.census.gov/table/ACSDP5Y2023.DP03?g=160XX00US2759350>). Accessed April 2025.

⁶³ City of Shakopee. 2025. Stay-Discover Shakopee. (available from: <https://discovershakopee.org/stay/>). Accessed April 2025.

Effects on temporary or permanent housing are anticipated to be negligible. During construction, out-of-town laborers will likely utilize some of the previously mentioned lodging facilities in the surrounding area. The residence and temporary housing statistics suggest the local area has ample accommodation for an influx of construction workers, if needed. The Company anticipates that sufficient temporary lodging and permanent housing will be available within Scott County, City of Shakopee, and adjoining cities to accommodate construction laborers and long-term personnel.

The Proposal will provide approximately \$60 million in revenue to the City of Shakopee and Scott County from property taxes over the 20-year life of the Project. Unlike wind or solar generation, the Project will not produce energy production taxes, as it stores and does not generate energy.

In general, the socioeconomic impacts associated with the Project will be positive; therefore, no mitigative measures are proposed. Wages will be paid, expenditures will be made to local businesses, and property tax revenue will be paid to local governments during the Project's construction and operation.

5.3 Land Based Economies

5.3.1 Agriculture

According to the U.S. Department of Agriculture's ("USDA") 2022 Census of Agriculture⁶⁴, approximately 99,629 acres of land in Scott County is comprised of farms, including 87,877 acres of cropland (88.2%), 5,136 acres of pastureland (5.2%), 4,001 acres of woodland (4.0%), and 3,964 of other land in farm uses (4.0%). A total of 624 individual farms are present in Scott County, with the average farm size at 160 acres.⁶⁴

On a per county basis, Scott County ranks 65th in the state for market value of total agricultural production and 65th in crop production (out of a total of 87 counties). As of 2022, Scott County's largest crop outputs by acre include corn for grain, soybeans for beans, and forage (hay/haylage). Cattle and calves, egg-laying hens, and broilers and other meat-type chickens comprise the majority of livestock production in Scott County. Scott County produced \$91.8 million in market value from agricultural

⁶⁴ USDA. 2022. Census of Agriculture. Scott County Profile (available from: https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/Minnesota/cp27139.pdf). Accessed April 2025.

products sold in 2022, including \$64.6 million from crops and \$27.2 million from livestock, poultry, and eggs.⁶⁴

Based on historical aerial imagery, the site has not been in agricultural production since at least 1940, when those records begin.⁶⁵ As such, no drain tile was identified from public data, making it unlikely that any drain tile exists in the site. Any drain tile that is discovered by the Company will be evaluated and recorded accordingly. No prime farmland is located within the site.¹⁰

Impacts and Mitigation Measures

The Project will be constructed partially on previously developed lands, barren lands, and partially on forested lands. No agricultural land will be impacted by the construction of the Project. Similarly, no agricultural land will be affected by the operation of the Project facilities. Agricultural fields are not located near the Project, and parcels in the site vicinity are largely zoned for industrial use. No mitigation is proposed.

5.3.2 Forestry

Timber harvesting in Scott County is low intensity, between 5 and 15 cubic feet of wood are removed per acre of forested land.⁶⁶ A deciduous tree stand is present in the northern portion of the site. The Project will result in the conversion of approximately 3.5 acres of forested land for Project uses. This forested area is small and would provide little value in commercial timber harvesting; therefore, no impacts to timber industries or other forestry resources are expected as a result of the Project.

Impacts and Mitigation Measures

No impacts to economically crucial forestry resources will occur from construction or operation of the Project. The replanting of trees for screening purposes is planned to mitigate visual and ecological impacts of the tree removal. These measures are discussed further in **Section 5.5.6**.

⁶⁵ University of Minnesota. 2015. Minnesota Historical Aerial Photographs Online. John R. Borchert Map Library. (available from: <https://apps.lib.umn.edu/mhapo/>). Accessed April 2025.

⁶⁶ U.S. Forest Service. 2018. Minnesota Timber Industry, 2014 – Resource Update FS-156 (available from: https://www.fs.usda.gov/nrs/pubs/ru/ru_fs156.pdf). Accessed April 2025.

5.3.3 Mining

According to the MnDOT Aggregate Source Information System Map,⁶⁷ there are no quarries or gravel pits located within the boundaries of the Project site. Two crushed stone quarries are located near the site, one immediately west of the Project, and an additional quarry located approximately 210 feet northwest of the Project. According to MnDOT, both quarries are active and are listed as having ‘excellent reliability’.⁶⁷ Active mining in the Project vicinity is limited to these two quarries.⁶⁷

Impacts and Mitigation Measures

No direct impacts on mining operations are anticipated; as no mines are located within the site. To avoid impacts to the adjacent rock quarries, Project equipment and personnel will be restricted from operating outside designated site boundaries. Coordination with quarry owners may be necessary during construction to avoid traffic impacts to the operation of the quarries.

5.3.4 Tourism

Tourism in the vicinity of the Project centers around fairs, amusement parks, leisure sports, gaming, nature parks and outdoor recreation. This includes the Minnesota Valley National Wildlife Refuge, Mystic Lake Casino, Canterbury Park Casino and Racetrack, Valleyfair amusement park, and other community festivals and outdoor recreation areas.

Quarry Lake is located directly west of the site and is used for outdoor recreation including fishing and water skiing in the lake and has a recreational trail around the perimeter. Several city and community parks are in residential areas south of the site. All-season sport complexes host organized activities throughout the year, and municipal golf courses comprise some of Shakopee’s outdoor recreation opportunities. Additionally, the Scott County Fair provides all-ages outdoor entertainment.⁶⁸

⁶⁷ MnDOT. 2023. Aggregate Source Information System Map. (available from: https://www.dot.state.mn.us/materials/asis_GE.html). Accessed April 2025.

⁶⁸ City of Shakopee. n.d. Recreation. (available from: <https://www.shakopecmn.gov/>). Accessed April 2025.

In 2023, Scott County generated approximately \$546.52 million in gross sales and employed 6,992 individuals in the leisure and hospitality industry.⁶⁹

Impacts and Mitigation Measures

Project facilities will be located on private land in an industrial zone. Impacts to Quarry Lake, which abuts the western site boundary, will be avoided through the implementation of erosion and sediment control practices detailed in the Project SWPPP and VMP (**Appendix D**). No impacts to Quarry Lake are expected as a result of construction or operation of the Project facilities.

The Company will construct the Project facilities within the site boundary. No road closures are anticipated during active construction. The Company will closely coordinate construction activities with the City and County if any closures are deemed necessary.

Events hosted by Scott County or the City of Shakopee do not occur within the site. The construction and operation of the Project will not hinder public access to events or recreational activities, and noise from the construction and operation of the Project is not anticipated to impact public events or recreation. No further mitigation measures with respect to tourism are being considered at this time.

5.4 Archaeological and Historic Resources

The Company has evaluated potential Project effects on archaeological and historical resources using desktop review, file searches, and field surveys. The Company performed a review of records for cultural resources in March 2025 for the area within one mile of the site. This review included a request for Minnesota Statewide Historic Inventory Portal data from the SHPO, a review of the online portal maintained by the Office of the State Archaeologist (“OSA”), and data for known National Register of Historic Places. Based on this review, there are no recorded cultural resource sites or records within the Project site.

As a conservative measure, a Phase I cultural resource field survey within the Preliminary Development Area was completed the week of April 14, 2025. As a result of these evaluations, no cultural resource artifacts, features, or sites, were identified (**Appendix G**).

⁶⁹ Explore Minnesota. 2024. 2023 Leisure & Hospitality Industry Data (available from: https://mn.gov/tourism-industry/assets/2023%20MN%20L%26H%20Data_tcm1135-665060.pdf). Accessed April 2025.

Additionally, the Company engaged cultural resource regulatory and tribal stakeholders to introduce the Project, request comments, and gain feedback as detailed in **Section 6.0** below (**Appendix C**). The Company sent a Project introduction letter and map to the Minnesota Tribal Nations requesting feedback on the Project. See **Section 6.0** for details and responses.

Impacts and Mitigation Measures

No previously recorded archaeological, architectural, or historic sites will be directly impacted by the Project, and there are no cultural resource artifacts, features, or sites, in the site. Prior to the start of construction, the Company will develop an Unanticipated Discoveries Plan outlining procedures to be followed in the event that previously unrecorded cultural resources or human remains are encountered during Project activities. If previously unknown archaeological resources are inadvertently discovered during construction or operation, all work in the immediate vicinity of the find will cease, and a qualified archaeologist will assess the discovery. If the resource is determined to be potentially significant, SHPO and the OSA will be promptly notified. In the event that human remains are inadvertently encountered, all work will immediately cease in the affected area. Local law enforcement will be contacted without delay, and the OSA will be notified in accordance with applicable state laws and regulations.

5.5 Natural Environment

5.5.1 Air Quality

Minnesota has a strong record of compliance with federal air quality standards, and air quality in the state has shown consistent improvement across most pollutants. Currently, all areas of Minnesota are designated as attainment areas for federal air quality standards, with the exception of a portion of Dakota County.⁷⁰ Much of this decline in pollution is attributed to lowered emissions from major facility or “point sources” from enforcement of the Clean Air Act (“CAA”) and subsequent amendments. The CAA requires that the EPA establish National Ambient Air Quality Standards for various pollutants, including carbon monoxide (“CO”), lead, nitrogen dioxide (“NO₂”), ozone

⁷⁰ EPA. 2024. Minnesota Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. (available from: https://www3.epa.gov/airquality/greenbook/anayo_mn.html). Accessed April 2025.

(“O₃”), particulate matter (“PM”), and sulfur dioxide (“SO₂”). The area surrounding the site presently meets federal air quality standards.⁷¹

In recent years, growing scientific understanding of the health impacts of certain pollutants has led to more stringent air quality standards. Lower thresholds have been established for several pollutants, including daily fine particulate matter (“PM_{2.5}”), ozone, and lead. According to the MPCA Air Quality in Minnesota: 2023 Report to the Legislature, a majority of sources that contribute the most to air pollution are transportation (e.g., traffic, airplanes, trains, and boats), permitted facilities (e.g., feedlots, solid waste, and hazardous waste facilities), and burning wood for home heating.⁷²

Air quality in Minnesota is monitored through a network of air quality monitoring stations operated by the MPCA. Data collected from these stations are used to calculate the Air Quality Index (“AQI”), on an hourly basis, for O₃, PM_{2.5}, SO₂, NO₂, and CO. The pollutant with the highest AQI value for a particular hour sets the overall AQI for that hour. The AQI is used to categorize the air quality of a region as one of five levels of quality: good, moderate, unhealthy for sensitive groups and unhealthy, or very unhealthy.⁷³

The nearest air quality monitoring station is in Shakopee, Minnesota, approximately 4.1 miles west of the Project. This station monitors O₃ and PM_{2.5}. The five most recent annual AQI Days in each category at the Shakopee monitoring station are provided in **Table 5.5-1**.⁷⁴

Table 5.5-1: Days in Each Air Quality Index Category (Shakopee, Minnesota)⁷⁴

Year	Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy
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⁷¹ MPCA. 2024. Minnesota Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. (available from: https://www3.epa.gov/airquality/greenbook/anayo_mn.html). Accessed April 2025.

⁷² MPCA. 2023. The air we breathe. The state of Minnesota’s air quality in 2021. Report to the Legislature, January 2023. (available from: <https://www.lrl.mn.gov/docs/2022/mandated/221697.pdf>). Accessed April 2025.

⁷³ MPCA. 2023. 2024 Air Monitoring Network Plan for Minnesota, Appendix A: 2023 Air Monitoring Site Descriptions. June 2023. (available from: <https://www.pca.state.mn.us/air-water-land-climate/air-quality-monitoring>). Accessed April 2025.

⁷⁴ MPCA. 2025. Annual count of days in each AQI category (available from: <https://webapp.pca.state.mn.us/aqistats/calendar>). Accessed April 2025.

2024	263	102	1	0	0
2023	231	117	12	5	0
2022	318	46	0	0	1
2021 ¹	293	58	0	0	0
2020	336	29	1	0	0
¹ Indicates years where Shakopee Monitoring Station was data was incomplete.					

Air quality has been considered good for the majority of the past five reported years in Shakopee. Since 2020, the largest number of days classified as moderate or worse occurred in 2023, where air quality was considered Unhealthy for Sensitive Groups and Unhealthy for all groups due to a large amount of smoke from wildfires. Wildfires have led to visible haze and health advisories throughout the State in 2023 and 2024.

Impacts and Mitigation Measures

Impacts on air quality from construction and operation of the Project are expected to be minimal and primarily confined to the construction period. Temporary and minor air quality effects may occur during construction due to exhaust emissions from construction equipment and vehicles, as well as fugitive dust generated from wind erosion of exposed soils, particularly during dry periods and activities such as grading.

The magnitude of construction-related air emissions will vary depending on the phase of construction and prevailing weather conditions. Exhaust emissions, primarily from diesel and other carbon-based fueled equipment, will vary with the phase of construction. Emissions from construction vehicles will be minimized by using modern equipment with lower emissions ratings and properly functioning exhaust systems. Construction of the Project will generate greenhouse gases (“GHG”), such as carbon dioxide (“CO₂”). Refer to **Section 5.5.2** and **Appendix H** for more information on construction and operation GHG emissions estimates.

Adverse impacts on the surrounding environment are expected to be negligible due to the short-term and intermittent nature of construction-related emissions. These impacts are anticipated to be less than historical emissions associated with urban development and industrial activities that may otherwise occur in the vicinity of the Project.

While some dust may be produced from use of planned gravel access roads from O&M vehicles, this emission is expected to be minimal, temporary, and infrequent throughout the year. Emissions generated by vehicles and equipment during operational activities will be further limited in duration and frequency from use of relatively few trucks, cars, and other related vehicles as part of O&M activities associated with the Project. Such impacts are relatively small in comparison to other energy projects with significantly larger footprints (e.g., utility-scale solar). Energy storage systems produce almost no GHGs during operation except for those related to O&M vehicle traffic.

Applicable BMPs will be used during construction and operation of the Project to minimize dust emissions. Additional BMPs will be implemented as part of the SWPPP (**Section 4.3.1**) which will also address emissions (e.g., reducing vehicle and equipment speed, maintaining equipment and exhaust/mufflers, etc.). Additional practices may include watering or treating haul and access roads and other exposed dust producing areas, containment of excavated material, protection of exposed soil, soil stabilization, and treatment stockpiles to control fugitive dust. The Company will obtain an NPDES Permit and prepare the required SWPPP, which will be developed prior to construction and implemented during construction, that will include BMPs to minimize potential for fugitive dust.

Operational air emissions from ESS projects are typically minimal compared to conventional power generation sources. Since ESS facilities do not rely on combustion processes during regular operation, they do not emit significant quantities of GHGs. However, indirect emissions may occur depending on the source of electricity used to charge the batteries. If grid power is drawn from fossil fuel-based plants, associated emissions can be attributed upstream. Additional minor emissions may result from auxiliary systems like HVAC units, but these are usually limited and subject to regulatory controls.

5.5.2 Climate Change

GHG Emissions

GHGs are atmospheric gases that contribute to the warming of the Earth's surface by trapping heat. The primary GHGs include CO₂, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. These gases originate from a variety of sources, with fossil fuel combustion representing the dominant source of CO₂ emissions in Minnesota. The majority of fossil fuels consumed are used for electricity generation and transportation.

Construction of the Project will result in temporary, short-term increases in GHG emissions due to the combustion of fossil fuels in construction equipment and vehicles (**Appendix H**). The Company has prepared a GHG emissions estimate for both the construction and operational phases of the Project, utilizing data from similar projects in Minnesota and its broader experience developing energy storage systems nationwide (**Appendix H**). This estimate accounts for the number and type of equipment, duration and schedule of use, and projected fuel consumption to calculate total diesel and gasoline use during construction and operations. The analysis also includes projected annual GHG emissions during operations, including on-site vehicle usage and commuter traffic associated with Project staff.

As discussed in **Section 5.5.1**, operation of ESS facilities does not emit significant quantities of GHGs.

Existing and Projected Future Climate Conditions

Data on historic and projected future temperature and precipitation were obtained from the MnDNR Climate Explorer tool⁷⁵ for Scott County. Climate variables reviewed included average annual temperature and annual precipitation indices using data from 1895-2024. Some of the climate projections summarized below use Representative Concentration Pathways, which are GHG scenarios used by the Intergovernmental Panel on Climate Change. Representative Concentration Pathways (“RCP”) 4.5 is an intermediate scenario in which emissions decline after peaking around 2040, and Representative Concentration Pathways 8.5 is a worst-case scenario in which emissions continue to rise through the 21st century.⁷⁶

Temperature

The mean temperature in the county between 1895-2024 was approximately 44.49°F, with the lowest average temperature in 1917 (39.81°F) and the highest average temperatures in 1931 (49.78°F). The model estimated the average annual temperature increased by 0.19°F per decade.⁷⁵

The average annual temperature in Scott County is projected to continue to rise in the foreseeable future. In 2040-2059, the average annual temperature under the intermediate scenario (RCP 4.5) is projected to be 48.59°F.⁷⁵

Lithium-ion ESS batteries and associated components function most efficiently within a specific optimal temperature range, which may vary slightly depending on the battery model. To maintain this temperature range under varying environmental and climatic conditions, ESS units are equipped with temperature regulation systems. These systems may include liquid or air-based cooling mechanisms, as well as passive strategies such

⁷⁵ MnDNR. 2025. Minnesota Climate Trends. (available from: <https://arcgis.dnr.state.mn.us/ewr/climatetrends/>) Accessed April 2025.

⁷⁶ MnDNR. 2025. Minnesota Climate Explorer Metadata. (available from: <https://www.dnr.state.mn.us/climate/climate-explorermetadata.html>). Accessed April 2025.

as natural convection, to ensure safe and reliable thermal management during operation.⁷⁷ Given the temperature ranges in the Project site, an appropriate temperature moderation system will be installed in the units to ensure consistent and efficient operation of the batteries. Similarly, the exterior and foundation components of the ESS units will be selected to withstand the current and anticipated environmental conditions of the region where the Project is located.

Precipitation

The mean precipitation over this same 129-year period in Scott County was 24.90 inches annually, with the lowest precipitation in 1910 (12.06 inches) and the highest precipitation in 2019 (42.39 inches). On average, precipitation has increased by 0.36 inches per decade.⁷⁵

The average annual precipitation in Scott County is projected to continue to rise in the foreseeable future. In 2040–2059, the mean precipitation under RCP 4.5 is projected to be 31.67 inches.⁷⁵

The models generally predict that the site will see more precipitation and warmer average, maximum, and minimum temperatures (**Table 5.5-2**). The mid-century (2040–2059) calculation is more relevant to the Project, given the 20-year operational life of the Project. The late-century (2080-2099) calculations are more relevant to the Project if repowered after the 20-year expected life.⁷⁶

Table 5.5-2: Historic and Projected Future Temperature and Precipitation Levels for Scott County, Minnesota^{75, 76}

Modeled Timeframes for Olmsted County ¹	Average Temperature Mean (°F)	Minimum Temperature Mean (°F)	Maximum Temperature Mean (°F)	Precipitation Mean (inches)
1895-2024	44.49	38.53	51.69	29.40
2040–2059 Mid-Century (RCP 4.5)	48.59	41.98	55.42	31.67
2080–2099 Late-Century (RCP 4.5)	51.02	44.80	57.58	32.07
2080–2099 Late-Century (RCP 8.5)	54.76	48.99	61.05	34.49

⁷⁷ Mdachi, N.K. and C. Choong-Koo. 2024. Comparative review of Thermal Management Systems for BESS. Batteries 10(7), 224 (available from: <https://doi.org/10.3390/batteries10070224>). Accessed April 2025.

¹ The projected future temperatures and precipitation are based on January – December, Mean Model.

Flooding

As discussed in **Section 5.5.5**, the Project is not located in floodplains. The MPCA reports that the state is experiencing more frequent and intense storms, a trend expected to continue, leading to record-breaking floods that damage infrastructure and natural resources. The Metropolitan Council's Climate Vulnerability Assessment⁷⁸ indicates that warming temperatures and increasingly severe flood events will trend upwards in the coming decades. In Scott County, which includes Shakopee, the percentage of properties at risk of flooding is projected to increase from 10.3% currently to 11% over the next 20 years. These projections underscore the importance of incorporating climate resilience and flood mitigation strategies into project planning and development in the region.

Other Climate Conditions

The ESS units selected for the Project will be designed to withstand wind, flood, blizzard, and hail events. ESS systems can help offset power loss during extreme weather by dispersing stored power while energy producing facilities are down. ESS has demonstrated this important function specifically in Texas during extreme winter storms when ESS facilities withstood the extreme conditions and continued to provide power into the grid. It has been reported that during the January 2024 winter freeze, ESS units saved an estimated \$750 million in day-ahead market costs by fulfilling essential ancillary services and freeing up to 3 gigawatts of gas generation to meet critical energy needs and reduce prices in the ERCOT market.⁷⁹ Throughout the summer and especially on September 6, 2023, amid extreme summer heat and surging power demand in Texas, batteries kept the lights on and averted an emergency load-shedding event by dispatching a peak of 2 gigawatts of power when ERCOT reserves were lowest.⁷⁹

Impact of Climate Change on Project

⁷⁸ Metropolitan Council. 2025. Climate Vulnerability Assessment. (available from: <https://metro council.org/Communities/Planning/Local-Planning-Assistance/CVA.aspx>). Accessed April 2025.

⁷⁹ Aurora Energy Research. 2024. Role of Battery Energy Storage Systems in the ERCOT Market. (available from: <https://auroraer.com/media/new-report-from-aurora-energy-research-finds-that-battery-storage-facilities-saved-texas-grid-over-750-million-during-peak-demand-days-in-winter-2024/>). Accessed April 2025.

According to the MnDNR, Minnesota's climate is already changing rapidly and will continue to do so for the foreseeable future. Temperatures are increasing, and larger, more frequent, extreme precipitation events are occurring. Future decades will bring even warmer winters and nights, and even larger rainfalls, along with the likelihood of increased summer heat and the potential for longer dry spells.^{75, 76}

The preliminary design of the Project incorporates both current and projected future climate conditions specific to the Project site. The ESS and associated infrastructure are engineered to withstand weather events that are reasonably expected to occur over the Project's operational lifespan. Equipment will be selected to ensure high reliability and operability across a range of anticipated environmental conditions, including variations in temperature, precipitation, wind, and mechanical loading.

Stormwater management infrastructure, including on-site stormwater basins, will be appropriately sized in accordance with state and county requirements. These systems are designed to reduce runoff rates and provide the required volume and quality treatment. In addition, moderate site grading, vegetated swales, and diversion berms may be implemented to direct surface water away from critical infrastructure and toward designated stormwater basins. Existing drainage patterns will be preserved to the extent practicable, and increased perennial vegetation within the site is expected to enhance infiltration, reduce runoff velocities, and promote on-site water retention.

All structural, civil, and electrical elements of the Project will comply with applicable local and state building codes, as well as nationally recognized standards. Design safety factors for snow and wind loading will be established based on guidance from these codes to mitigate risks associated with extreme weather events. Final system components, including equipment pads, will be designed to meet or exceed code requirements for structural integrity under site-specific wind and snow load conditions.

Impact of Project on Climate Change

Minnesota has been taking more action against climate change. Executive Order 19-37 (Climate Change Executive Order), signed in December 2019, created the Governor's Advisory Council and the Climate Change Subcabinet to coordinate climate change mitigation and resilience strategies in the State of Minnesota. The subcabinet's 2020 Annual Report to the Governor describes climate change as an existential threat that impacts all Minnesotans and our ability to thrive. The Annual Report also encourages

state leaders and policy makers to consider equity in our state's response to climate change.⁸⁰

The Next Generation Energy Act established statutory GHG emission reduction targets for the State of Minnesota, aiming for an 80% reduction in statewide emissions by 2050 relative to 2005 levels. The Next Generation Energy Act also set interim benchmarks, including a 15% reduction by 2015 and a 30% reduction by 2025. Between 2005 and 2020, Minnesota achieved a 23% reduction in GHG emissions, and current trends indicate the state is on track to meet the 30% reduction goal by 2025. Notably, emissions from the electricity generation sector have declined by approximately 54% since 2005, largely due to the transition toward renewable energy sources such as wind and solar. These reductions reflect the combined impact of clean energy policies, increased energy efficiency, and expanded deployment of renewable energy technologies across the state.⁸¹

ESS is critical infrastructure to support renewable energy utilization. Renewable energy sources, such as wind and solar, reduce emissions by replacing emission producing energy sources. However, the full energy generation capacity of renewable energy production is not currently utilized because they produce more energy than is needed at times of the day when demand for energy is low, resulting in curtailment, the reduction of energy production of a wind or solar generating facility from what it could be producing.

ESS infrastructure can reduce curtailment of renewable generation resources and maximize renewable contributions to the grid. ESS allows for greater utilization of renewable energy sources by storing excess energy during peak production by wind and solar and releasing it back on to the grid during peak demand periods. This process reduces reliance on lower-efficiency, high-cost generation energy resources.

The Project will have other benefits as well, such as reducing the need for and minimizing additional transmission infrastructure that would otherwise be required if new generating facilities were needed to provide the demand and frequency benefits the Project is capable of providing.

⁸⁰ MPCA. 2020. Annual Report to the Governor on the Climate Change Executive Order (available from: https://climate.state.mn.us/sites/climate-action/files/2021-01/ClimateChangeSubcabinetReport_2020_cc-mn3-01.pdf). Accessed April 2025.

⁸¹ DOC and MPCA. 2023. Greenhouse Gas Emissions in Minnesota 2005- 2020. Report to the Legislature. January 2023. (available from: <https://www.pca.state.mn.us/sites/default/files/Iraq-2sy23.pdf>). Accessed April 2025.

5.5.3 Geology and Groundwater Resources

Soils, underlying geologic bedrock formations, groundwater, and other hydrogeologic resource features of the Project site were identified during desktop and field evaluations and included use of:

- Applicable Geographic Information System (“GIS”) layers (National Resource Conservation Service Soils of Scott County,¹⁰ Minnesota County Well Index,⁸² Karst Feature Mapping of Minnesota,⁸³ U.S. Geologic Survey [“USGS”] Topographic Mapping);
- Public data sources including the Scott County Geologic Atlas;⁸⁴ and
- Observations made during field studies conducted within the Project site during 2025.

Geology

According to the County Geologic Atlas of Scott County, Minnesota (Part A),⁸⁵ the present-day land surface of Scott County reflects a complex history shaped predominantly by glacial activity during the Quaternary period. Surficial materials across Scott County consist largely of glacial drift, which includes till, outwash, and lacustrine sediments. The glacial till is generally a heterogeneous mixture of sand, gravel, and fine-textured matrix, ranging from sandy loam to silt loam, with variable concentrations of cobbles and boulders.

The thickest Quaternary sediments in Scott County are within lowlands and former meltwater pathways, where the depth to bedrock can be as much as 250 feet. Across much of the county, the Quaternary sediment cover ranges from a few feet to over 100 feet thick. Within the site, deposits over bedrock surfaces range in depth from 0 feet to

⁸² MDH. 2025. Minnesota Well Index. Version 2.1.2 (available from: <https://mnwellindex.web.health.state.mn.us/>). Accessed April 2025.

⁸³ University of Minnesota. 2025. Karst Feature Inventory: Karst Features in Minnesota (available from: <https://mnatlas.org/resources/karst-feature-inventory-points/>). Accessed April 2025.

⁸⁴ University of Minnesota. 2006. County Geological Atlas – Scott County Atlas, C-17, Part A – Geology. Minnesota Geological Society (available from: <https://cse.umn.edu/mgs/county-geologic-atlas#CGA-Map-Data-Library>). Accessed April 2025.

⁸⁵ Setterholm, D.R. 2006. C-17 Geologic atlas of Scott County, Minnesota. (available from: the University Digital Conservancy, <https://hdl.handle.net/11299/58717>). Accessed April 2025.

over 75 feet deep.⁸⁶ The bedrock underlying the Quaternary glacial sediments in Scott County consists of sedimentary rocks ranging in age from the Precambrian to the Upper Ordovician. These formations include interbedded layers of limestone, dolostone (carbonate), shale, sandstone, and siltstone, originally deposited in shallow marine environments long before the onset of glaciation. The structure and distribution of these bedrock units have been influenced by regional geologic processes, including episodes of faulting and folding. Overlying these formations, the glacial drift, comprising till, outwash, and lacustrine sediments, was deposited much later during multiple advances of continental glaciation throughout the Quaternary period.

The risk for karst in the site is considered low. According to the University of Minnesota Department of Geology and Geophysics and the MnDNR Ecological and Water Resources Division's Karst Mapping,⁸⁷ susceptible geologic features, including sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions are not present in the vicinity of the Project.

Impacts and Mitigation Measures

Constructing a gravel foundation on shallow bedrock involves careful preparation to ensure structural stability and proper drainage. The process begins by clearing the site of vegetation, topsoil, and any loose material, followed by surveying the area to assess the elevation and contours of the bedrock surface. If the bedrock is exposed or very close to the surface, minimal excavation may be needed. In cases where the bedrock is uneven or fractured, it may require leveling with mechanical equipment or by placing a thin layer of sand or fine gravel to create a uniform base. Installing a non-woven geotextile fabric over the bedrock may be endorsed, depending on the encountered conditions during future geotechnical investigations. The total gravel thickness will depend on the intended load and structure, as well as the depth to bedrock in specific locations throughout the site.

⁸⁶ Minnesota Geological Survey. 2025. D-03, Depth to Bedrock - Minnesota 2023. (available from: <https://mngs-umn.opendata.arcgis.com/content/7d6744ce505d45e781fd4a063baeba14/about>). Accessed April 2025.

⁸⁷ MnDNR. 2022 (updated April 14, 2024). Karst Feature Inventory: Karst Features in Minnesota. (available from: <https://arcgis.dnr.state.mn.us/portal/apps/webappviewer/index.html?id=9df792d8f86546f2aafc98b3e31adb62>). Accessed April 2025.

Despite the Project being located within the wide-ranging groundwater Province 3 (Karst), no karst features have been identified within ten miles of the Project and are not anticipated to be a concern for the Project.

Geotechnical soil borings will be completed by the Company as preliminary Project design and engineering advances; this information will be assessed for potential impacts to geologic resources.

Groundwater

Minnesota is divided into six groundwater provinces based on bedrock and glacial geology. The aquifers within these provinces occur in two general geologic settings: (1) bedrock; and (2) unconsolidated sediments deposited by glaciers, streams, and lakes. The Project is located within Province 3 (Karst) and is underlain by productive bedrock aquifers; however, those aquifers closest to the surface are often impacted by human activities.⁸⁸ This province and region have bedrock aquifers comprising thick, laterally extensive sequences of sandstone, siltstone, and limestone, as well as dolostone of sedimentary origin. Groundwater is present in bedrock joints, fractures, and pores. In areas of surficial sand and buried sands, groundwater availability is limited.⁸⁸

According to the County Geologic Atlas for Scott County, Minnesota,⁸⁵ Scott County's present land surface is the result of the actions of glacial ice and its flowing meltwaters. The two main aquifers or systems in Scott County are the Cambrian-Ordovician aquifer system and the Maquoketa Confining Unit. Based on information from the USGS Ground Water Atlas,⁸⁹ the site is underlain by the Cambrian-Ordovician aquifer system. This aquifer system consists primarily of sandstone in the lower part and sandstone and shale interbedded with limestone or dolomite in the upper part. The dominant use of the water is for the public drinking supply and agriculture. The aquifer is recharged through downward movement of water from the overlying surficial aquifer system.

⁸⁸ MnDNR. 2021. Minnesota Groundwater Provinces. (available from: https://www.dnr.state.mn.us/waters/groundwater_section/mapping/provinces.html). Accessed April 2025.

⁸⁹ USGS. 1992. Ground Water Atlas of the United States: Segment 9, Iowa, Michigan, Minnesota, Wisconsin Hydrologic Atlas 730-J. Series # 730J (available from: <https://doi.org/10.3133/ha730J>). Accessed April 2025.

Depth to the water table within the site ranges from 0–30 feet, with an average depth of 10-20 feet to the water table.⁹⁰

The Minnesota Well Index Data indicates that most wells in the area draw from the Prairie du Chien - Jordan aquifer, which is within the larger Cambrian-Ordovician aquifer system.⁸²

Under the federal Safe Drinking Water Act, each state is required to develop and implement a Wellhead Protection Program to identify land and recharge areas that contribute to public water supply wells and to prevent contamination of these drinking water sources. In 1986, the Safe Drinking Water Act was amended to include the establishment of a broader Source Water Assessment Program, which evaluates potential sources of contamination to both groundwater and surface water using a watershed-based approach. A Wellhead Protection Area (“WHPA”) refers to the zone surrounding a public water supply well where contaminants, if present, could migrate into the well and compromise water quality.

Public and non-public community water supply source-water protection in Minnesota is administered by the MDH through the Wellhead Protection Program. WHPAs for public and community water-supply wells are delineated based on a zone of capture for 10-year groundwater time-of-travel to the well and are available through a database and mapping layer maintained by MDH. A search for WHPAs in the MDH Source Water Protection Web Map Viewer⁹¹ indicated the site is not located within any WHPAs or Drinking Water Supply Management Areas (“DWSMA”). In vicinity of the Project, identified DWSMAs include the 20,728-acre Shakopee DWSMA (immediately west of the site) and the 462-acre Savage NW DWSMA (approximately 1.8 miles east of the site).

The MDH uses a vulnerability rating method in which points are assigned for conditions that represent a perceived risk to a well.⁹² The evaluation includes each of the criteria noted below, where such information is available. Vulnerability assessments

⁹⁰ MnDNR. 2016. Water-Table Elevation and Depth to Water Table, Minnesota Hydrogeology Atlas series HG-03 (available from: <https://gisdata.mn.gov/dataset/geos-hydrogeology-atlas-hg03>). Accessed April 2025.

⁹¹ MDH. 2023. Source Water Protection Web Map Viewer (available from: <https://mdh.maps.arcgis.com/apps/View/index.html?appid=8b0db73d3c95452fb45231900e977be4>). Accessed April 2025.

⁹² MDH. 2018. Wellhead Protection Vulnerability Fact Sheet. (available from: <https://www.health.state.mn.us/communities/environment/water/docs/swp/vulnerability.pdf>). Accessed April 2025.

consider the following: geologic sensitivity, well construction, maintenance, and use. Higher point totals suggest relatively greater well vulnerability and vice versa. A numeric cutoff is used to categorize “vulnerable” from “nonvulnerable” wells. The Shakopee DWSMA is classified as high, moderate, and low vulnerability by the MDH, while the Savage NW DWSMA is classified as moderate vulnerability.

The MDH Well Index identified 102 wells in the public land survey system sections within one mile of the site, with average depth to bedrock of 163 feet below ground surface. There are no wells within the site.⁸² Within the one-mile buffer, a majority of wells are used for domestic purposes, with some monitoring wells and wells used for “other” purposes in proximity. **Table 5.5-3** provides a representative sample of wells within one mile of the Project.

Table 5.5-3: MDH Well Index Representative Sample of Wells within one mile of the Project⁸²

Unique Number	Well Name	Elevation (ft)	Depth (ft)	Casing Depth (ft)	Casing Diameter (inches)
220601	NSP BLUE LAKE FIRE WELL	754.6	195	53	20
236107	PCI SITE	732	462	210	11
205969	GENERAL TRACTOR	730	310	267	3
220602	SHIELY QUARRY (DNR OB 70013)	750	92	42	4
661420	MET. COUNCIL AIB-4	720	120	18	6
800895	RECOVERY TECHNOLOGY SOLUTIONS	734.3	95	61	6
205971	PETERSON SEED CO.	733	416	274	8
640554	METROPOLITAN COUNCIL ENV	723	33	32	20
205972	NORTH STAR AUTO AUCTION	735	258	188	4
247250	BLOOMINGTON FERRY BRIDGE	715	465	283	6
207405	SMITH, TEST HOLE 5	725	100		
273775	DEANS LAKE #5 (DNR OB 70012)	718.5	21	18	2
207067	GROSS, ROGER	740	101	95	4
207406	SMITH, TEST HOLE 6	745	100		
256739	EXCEL ENERGY	758	282	182	8
273772	DEANS LAKE #2 (DNR OB 70006)	754	20	17	1.5
767857	DW-6	725	101	26	18
207070	BLUE LAKE WASTEWATER PLA	705	68	34	12
661421	MET. COUNCIL AIB-5	712	120	24	6

205973	NORTH STAR AUTO AUCTION	740	273	198	4
244434	DNR OB 70003	724.67	22	18.6	1.25
767851	DW-8	725	106	29	18
804051	TOTAL SANITATION	735	92	88	4
686300	DW-7	725	104	29	18
502765	HAMILL, ROBERT	744	320	258	4
434057	FERGUSON, DUANE	737	250	250	3
541552	MET. COUNCIL ENV. SERV	715	70	32.5	24
686299	METROPOLITAN COUNCIL	726	0	0	0
540201	RYAN CONTRACTING, INC.	743	87	81	4
428614	FERGUSON, DUANE	737	216	210	4

Impacts and Mitigation Measures

Grading and construction work to be performed for the Project is anticipated to involve soils in the upper 10-20 feet of the surface. The Company will be completing additional geotechnical studies closer to the construction date to further inform the Project's design, engineering, and construction techniques. There are no designated sole source aquifers⁹³ or WHPAs within the site.⁹²

Construction of Project facilities is not likely to require subsurface blasting; therefore, disturbances to groundwater flow from newly fractured bedrock are not anticipated. Any dewatering required during construction will be managed in accordance with the SWPPP and discharged to the surrounding surface, thereby allowing it to infiltrate back into the ground to minimize potential impacts.

Project facilities are not likely to affect the use of existing water wells. Preliminary design indicates that Project facilities will be located at about 1,000 feet from the nearest identified drinking well. No impacts to this well are expected. If an unknown well is discovered that was not mapped on available mapping resources, the Company will coordinate with the MDH.

Impacts on groundwater resources (including aquifers) are not anticipated during operation of the Project as water supply needs will be quite limited. Potable water for

⁹³ EPA. 2020. Sole Surface Aquifers Viewer. (available from: <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b>). Accessed April 2025.

facility personnel and O&M uses are anticipated to be provided through use of an existing domestic water well at the Blue Lake Peaking Plant.

The ESS will require concrete foundations. The depth that the foundations will be installed at is an estimated range of one to three feet below ground surface (depending on soil conditions) and would, therefore, not impact aquifer resources.

Project operation will not require the use or storage of large quantities of hazardous materials that might otherwise have the potential to spill or leak into area groundwater. No chemicals are planned to be used for ESS unit washing activities. The ESS units are cleaned annually using a wet cloth and rubbing alcohol, if needed. Herbicides may be used for vegetation management, which will follow applicable regulatory use and management requirements or as required by applicable permit(s). Pesticides may be used around ESS units to control insects, and any use would also follow applicable requirements.

An SPCC Plan will be required for the Project substation main power transformer. The transformer will be properly designed, constructed, and operated per the SPCC Plan and in accordance with EPA and MPCA requirements; it will be equipped with required secondary containment to contain any potential spills or leaks of transformer oil or other fluids to prevent impacting the groundwater.

5.5.4 Soils

The Soil Survey of Scott County indicates that the soils of Scott County are predominantly deep, dark-colored soils developed from silty glacial lacustrine deposits and loamy glacial till, reflecting the county’s glacial history and variable topography.¹⁰

The soils within the site are typically sandy soils with a small amount of muck and fine sandy loam, as indicated in **Table 5.5-4**. The site has rolling topography, which is consistent with the current barren, grassy, and slightly forested nature of the area. Small areas of hydric and predominantly hydric soils are scattered throughout the site (**Map 7**).¹⁰

Table 5.5-4: Soils within Site¹⁰

Map Unit Symbol	Map Unit Name	Farmland Classification	Hydric Rating ¹	Acres
Dg	Dune land	Not prime farmland	Non-hydric	4.7
Ia	Isanti fine sandy loam	Not prime farmland	Predominantly hydric	5.0
INT	Water, intermittent	Not prime farmland	Non-hydric	1.1

PaA	Klossner muck, 0 to 1 percent slopes	Farmland of statewide importance	Hydric	4.5
ZaB	Sartell fine sand, 2 to 6 percent slopes	Not prime farmland	Predominantly non-hydric	3.2
ZaC2	Sartell fine sand, 6 to 12 percent slopes, moderately eroded	Not prime farmland	Non-hydric	49.7
Total (acres)				68.2
¹ The Hydric Rating is based on the composition of hydric components of a soil unit. The five classes are Hydric (100% hydric components), Predominantly Hydric (66%–99% hydric components), Partially Hydric (33%–65% hydric components), Predominantly Nonhydric (1%–32% hydric components), and Nonhydric (less than 1% hydric components).				

Most of the soil types at the site are classified as non-hydric (55.5 acres). The remaining soils are classified as predominantly non-hydric (3.2 acres), predominantly hydric (5.0 acres), and hydric (4.5 acres).¹⁰

Impacts and Mitigation Measures

Impacts to soils will occur during both the construction and, to a much lesser degree, operational stages of the Project. Grading impacts will primarily be from construction of foundations for the Project substation, ESS, stormwater basin area(s), and access roads.

Because the Project is located on slightly rolling topography within a mixed landscape environment, some amount of grading will be necessary for the Project. Some soil compaction may result from the installation of the foundations for the ESS modules. Soil compaction will be mitigated by use of low-impact equipment and methods, regrading, and tilling these areas following construction.

During operation of the Project, ongoing soil compaction could occur from the use of access roads. This impact is expected to be negligible, confined to the roadbed, and mainly from relatively light duty maintenance vehicles. Potential erosion will be further minimized by dressing access roads with gravel and installing culverts under access roads where necessary to redirect concentrated surface water runoff.

The Project will disturb over one acre and will therefore require coverage under the MPCA’s Construction Stormwater General Permit. The Company will obtain coverage under the MPCA’s Construction Stormwater General Permit and prepare the required SWPPP information prior to construction. The SWPPP will be implemented during construction activities and will include BMPs, such as silt fencing (or other erosion

control devices), revegetation plans (in conjunction with the VMP), and management of exposed soils to prevent erosion. BMPs will be used during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion from water or wind. Practices may include containment of excavated material, protection of exposed soil, stabilization of restored material, and treatment of stockpiles to control fugitive dust. Finally, the Project design will include installation of a stormwater basin(s) in accordance with MPCA regulations to collect and treat runoff from the Project during operations (**Figure 2**).

5.5.5 Surface Waters

No mapped rivers, streams, lakes, fens, or MnDNR Public Waters are present in the Project site (**Map 8**).⁹ The nearest Public Waters Inventory waterbody is Fisher Lake, located approximately 3,000 feet north of the Project site; the nearest Public Waters Inventory watercourse is an unnamed stream, located more than 2,700 feet west. The Project is located in the Minnesota River – Shakopee Watershed (HUC8: 07020012) watershed.⁹

Wetlands

Wetlands are valuable for surface and subsurface water storage, nutrient cycling, retention of sedimentation, and plant and animal habitats. The potential for wetlands within the site was initially determined by reviewing desktop resources (i.e., National Wetlands Inventory [“NWI”] data, aerial photography, hydric soils map units, LiDAR, and digital elevation models) followed by a formal wetland delineation of the Project site in 2024 (**Appendix I**). As a result of the formal wetland delineation, a single Palustrine Emergent/Forested wetland was identified in the northern portion of the site (**Map 8**). This wetland was previously covered by NWI, but was determined in the field to be of smaller size than indicated by NWI. No other surface waters were identified. As noted in the wetland delineation report provided in **Appendix I**, the City of Shakopee, acting as the Local Government Unit for the Wetland Conservation Act, concurred with these findings. The Project was intentionally sited away from the sole delineated wetland to avoid detrimental environmental impacts and further permitting requirements.

Floodplains

The Federal Emergency Management Agency (“FEMA”) Flood Insurance Rate Map and National Flood Hazard Layer Viewer⁹⁴ was reviewed regarding existing floodplains and flood risk in the site. There are no mapped FEMA floodzones within the site and therefore, there will be no impacts to floodplains.

Impaired Waters

An Unnamed Creek (discussed as the Prior Lake Outlet Channel) and Dean Lake are listed by the MPCA as impaired waters within one mile of the site.⁹⁵ **Table 5.5-5** identifies the impaired water segments nearest to the site and lists their impairments.⁹⁵

Table 5.5-5: Impaired Waters⁹⁵

Water Body Name	AUID	Affected Designated Use	Pollutant or Stressor	Distance from Project site (miles)
Unnamed Creek (Prior Lake Outlet Channel)	07020012-728	Aquatic Life	Benthic macroinvertebrates bioassessments; fish bioassessments	0.5
Dean Lake	70-0074-00	Aquatic Recreation	Nutrients	1.0

Due to the proximity of impaired waters, the SWPPP will incorporate additional BMPs to ensure that no sedimentation or other adverse impacts affect the Prior Lake Outlet Channel or Dean Lake during construction activities.

⁹⁴ FEMA. 2025. National Flood Hazard Layer and Flood Insurance Rate Maps. (available from: <https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd>). Accessed April 2025.

⁹⁵ MPCA. Impaired Waters: 2024 Viewer. (available from: <https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=fcc5a12d2fd4b16bc95bb535d09ae82>). Accessed April 2025.

Impacts and Mitigation Measures

The Project is not expected to impact surface waters due to the absence of wetlands, waterways, waterbodies, and floodplains within the Preliminary Development Area. The sole delineated wetland in the northern portion of the site will be marked during construction to confirm avoidance by construction employees and equipment. No other surface water features are present within the Project site. During construction, appropriate BMPs will be implemented and maintained in accordance with an NPDES Permit and SWPPP that will be in place for the Project to avoid and minimize stormwater sedimentation to adjacent surface waters. A stormwater basin(s) within the Preliminary Development Area is planned to collect and treat/discharge runoff in compliance with MPCA regulations.

5.5.6 Vegetation

As noted in **Section 5.1**, the Project is located in the Big Woods Subsection.¹³ Historically, oak woodland and maple-basswood forest were the most common vegetation types. Agriculture is the most prominent land use in this subsection, with the remaining natural areas in the subsection (approximately 15%) consisting of upland forest or wetland.¹³

Based on the wetland delineation discussed in **Section 5.5.5**, one small wetland was delineated in the northern portion of the site. **Section 5.5.5** provides more information on surface waters.

Land cover within the site is detailed in **Table 5.5-6** and shown in **Map 5**.⁵⁴ A majority of the site is covered by herbaceous vegetation (76.8%). Based on the information provided in the wetland delineation report (**Appendix I**), the site is dominated by non-native herbaceous vegetation. Additionally, smaller percentages of artificial surfaces and associated areas and planted or cultivated vegetation are present (21.4% and 1.8%, respectively). The artificial surfaces are associated with the existing Blue Lake Substation and roadways.

Table 5.5-6: MLCCS Land Cover Within the Site⁵⁴

Land Cover Category	Acres	Percent of Site
Artificial Surfaces and Associated Areas	14.6	21.4
11% to 25% impervious cover with perennial grasses	14.6	21.4
Pavement with 76% to 90% impervious cover	<0.1	<0.1
Sand and gravel pits with 11% to 25% impervious cover	<0.1	<0.1
Herbaceous	52.3	76.8
Dry oak savanna barrens subtype	18.5	27.1

Dry prairie barrens subtype	17.8	26.1
Grassland with sparse deciduous trees – altered/non-native dominated vegetation	1.8	2.6
Medium-tall grass altered/non-native dominated grassland	5.8	8.6
Oak woodland-brushland	8.5	12.4
Planted or Cultivated Vegetation	1.2	1.8
Upland soils with planted or maintained grasses	1.2	1.8
TOTAL	68.2	100
Note: Addends may not sum due to rounding.		

Impacts and Mitigation Measures

Although the design has not been finalized, the Company anticipates that approximately 7.8 acres of greenfield space will be permanently developed for Project operation. Preliminary design of the Project includes limited tree clearing; the Project will coordinate with the USFWS and the City of Shakopee to minimize impact to forested land and potentially suitable habitat for federally protected species.

The Company’s vegetation goals for operating the ESS facility include establishing stable ground cover, reducing erosion and runoff, and improving infiltration. BMPs for vegetation management are described in the VMP found in **Appendix D**.

5.5.7 Wildlife and Habitats

Wildlife species that are likely to be present in the Project site include common species adapted to an environment consisting of limited natural vegetation, impervious surface, and barren land, located primarily within an urbanized matrix. As mentioned in **Section 5.5.6**, more than 50% of the site consists of a type of barren land cover. Mammals that may utilize these areas include, but are not limited to, the common raccoon (*Procyon lotor*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), thirteen-lined squirrel (*Spermophilus tridecemlineatus*), and white-tailed deer (*Odocoileus virginianus*).

Bird species that may utilize these exurban areas include the American crow (*Corvus brachyrhynchos*), eastern bluebird (*Sialia sialis*), mourning dove (*Zenaida macroura*), wild turkey (*Meleagris gallopavo*), various small perching birds, and common raptors, such as red-tailed hawks (*Buteo jamaicensis*). Though generally barren, the landscape may offer short-term foraging areas for common waterfowl, including Canada geese (*Branta*

canadensis) and mallards (*Anas platyrhynchos*). Creation of surface water features in stormwater ponds or wetlands will also add a water source for the immediate vicinity.

Reptiles and amphibians accustomed to grassland and barren habitats such as the American toad (*Anaxyrus americanus*), common garter snake (*Thamnophis sirtalis*), and northern leopard frog (*Lithobates pipiens*), may also be present in the Project site.⁹⁶ However, due to the relative lack of diverse vegetation cover and habitat structure, even these common species' use of the grassland habitat is likely limited to occasional foraging in the grasses.

A greater diversity of wildlife habitat for migratory birds or other wildlife is present in areas outside of the site. Although barren land is the dominant land cover type in the area surrounding the site, the extensive forested and riverine areas around and along the Minnesota River, approximately 0.5 miles north of the site, provide higher quality habitat for wildlife.

Avian Species

The Project is located within the Mississippi Flyway, one of four migration flyways in North America for millions of birds and hundreds of species that migrate between South and Central America. Avian species utilize the Mississippi Flyway and travel north along the Gulf of Mexico before following the Mississippi River.⁹⁷ An abundance of rivers and lakes make the Mississippi Flyway an ideal route for waterfowl, shorebirds, and other waterbirds.⁹⁸

The site is also located within the Prairie Hardwood Transition Bird Conservation Region ("BCR 23").⁹⁹ The USFWS identified 30 species of birds within BCR 23 as Birds

⁹⁶ MnDNR. n.d. Animals: Reptiles and Amphibians. (available from: <https://www.dnr.state.mn.us/animals/index.html>). Accessed April 2025.

⁹⁷ USFWS. 2017. USFWS Administrative Waterfowl Flyway Boundaries. [Shapefile] (available from: <https://ecos.fws.gov/ServCat/Reference/Profile/42276>). Accessed April 2025.

⁹⁸ Fritts, R. 2022. Avian Superhighways: The Four Flyways of North America. American Bird Conservancy. Bird Call Blog. May 16, 2022 (available from: <https://abcbirds.org/blog/north-american-bird-flyways/>). Accessed April 2025.

⁹⁹ Bird Studies Canada and NABCI. 2014 (Updated 2020.). Bird Conservation Regions (BCRs). Published by Bird Studies Canada on behalf of the North American Bird Conservation Initiative (available from: <https://birdscanada.org/birdscience/nabci-bird-conservation-regions>). Accessed April 2025.

of Conservation Concern (“BCC”);¹⁰⁰ BCC are avian species that represent the agency’s highest conservation priorities. Based on the April 2, 2025, USFWS Information for Planning and Consultation (“IPaC”) report, birds of particular concern are listed in **Table 5.5-7** and **Appendix J** because they occur on the BCC list or could potentially occur in the Project vicinity.¹⁰¹

Table 5.5-7: IPaC Report Identified BCC or Other Species of Concern¹⁰¹

Common Name	Scientific Name	Breeding Season
American Golden-plover	<i>Pluvialis dominica</i>	Breeds elsewhere
Bald Eagle	<i>Haliaeetus leucocephalus</i>	December 1 to August 31
Black Tern	<i>Chlidonias niger surinamensis</i>	May 15 to August 20
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	May 15 to October 10
Bobolink	<i>Dolichonyx oryzivorus</i>	May 20 to July 31
Canada Warbler	<i>Cardellina canadensis</i>	May 20 to August 10
Chimney Swift	<i>Chaetura pelagica</i>	March 15 to August 25
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	May 1 to July 20
Grasshopper Sparrow	<i>Ammodramus savannarum perpallidus</i>	June 1 to August 20
Henslow’s Sparrow	<i>Centronyx henslowii</i>	May 1 to August 31
Lesser Yellowlegs	<i>Tringa flavipes</i>	Breeds elsewhere
Pectoral Sandpiper	<i>Calidris melanotos</i>	Breeds elsewhere
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	May 10 to September 10
Rusty Blackbird	<i>Euphagus carolinus</i>	Breeds elsewhere
Semipalmated Sandpiper	<i>Calidris pusilla</i>	Breeds elsewhere
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Breeds elsewhere
Wood Thrush	<i>Hylocichla mustelina</i>	May 10 to August 31

Note: For more information on species listed, review the USFWS IPaC Report for the Project in **Appendix J**.

The MBTA of 1918 regulates the taking, selling, transporting, and importing of migratory birds, their nests, eggs, parts, or products.¹⁰² The MBTA protects more than 1,000 species of birds that occur within the United States. Most birds within the Project site would be afforded protection under the MBTA. The BGEPA protects and conserves bald eagles and golden eagles from intentional take of an individual bird, chick, egg, or nest, including alternate and inactive nests. Unlike the MBTA, BGEPA prohibits disturbance that may lead to biologically significant impacts, such as

¹⁰⁰ USFWS. 2008. Birds of Conservation Concern. U.S. Fish and Wildlife Service Division of Migratory Bird Management, Arlington, Virginia. 85 pp. (available from: <https://ecos.fws.gov/ServCat/DownloadFile/134745>). Accessed April 2025.

¹⁰¹ USFWS. 2025. Information for Planning and Consultation: Blue Lake ESS - 04022025.

¹⁰² See 16 U.S.C. 703–712.

interference with feeding, sheltering, roosting, and breeding or abandonment of a nest.¹⁰³

The Company conducted a site reconnaissance on March 26, 2025, to identify and evaluate the habitat in the site and vicinity that may be used by threatened or endangered species listed in the IPaC or MnDNR Minnesota Conservation Explorer tool. The site reconnaissance revealed minimal nesting habitat within the site for listed avian species and no stick nests were observed within the site. More detailed and specific information on habitat and wildlife can be found in **Appendix J**.

Land cover within the site consists of 52.3 acres of herbaceous habitat (76.8 percent of the site), 14.6 acres of artificial or otherwise unsuitable habitat (21.4 percent of the site), and 1.2 acres of cultivated or planted habitat (1.8 percent of the site)⁵⁴ (**Map 5**). The limited forest habitat within the site represents suitable habitat for migratory birds that may roost, nest, or forage in wooded habitat; however, there is much greater habitat available along the Minnesota River north of the site. Though limited tree clearing is expected within the site, impacts to forest birds are not anticipated due to the greater quality habitat north of the site. Furthermore, the Company will coordinate with the USFWS to best minimize impacts to potentially suitable habitat within the site. The site has no open water and one delineated wetland in the northern portion of the site (**Section 5.5.5**). Due to the limited size of the delineated wetland and the avoidance measures in place by the Project, impacts to water-dependent birds are not anticipated to occur within the site.

Waterfowl Feeding and Resting Areas

No waterfowl feeding and resting areas are located within one mile of the site.¹⁰⁴

Important Bird Areas

Audubon Important Bird Areas (“IBAs”) are voluntary, non-regulatory, and part of an international conservation effort. The program relies on participation of private landowners, public land managers, and community members to: identify the most essential habitats for birds and designate IBAs in Minnesota, monitor these areas for changes to birds and their habitats, and conserve these areas for long-term protection

¹⁰³ USFWS. 2007. National Bald Eagle Management Guidelines. Arlington, VA. (available from: https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf). Accessed April 2025.

¹⁰⁴ MnDNR. 2025. Migratory Waterfowl Feeding and Resting Areas. (available from: <https://gisdata.mn.gov/dataset/env-migratory-waterfowl-areas>). Accessed April 2025.

of birds.¹⁰⁵ The northern portion of the site overlaps with the Lower Minnesota River Valley IBA; however, no permanent infrastructure will be sited in this area.¹⁰⁶

Impacts and Mitigation Measures

The Company has designed the Project’s permanent infrastructure to avoid areas with the potential for high quality habitat. BMPs outlined in **Section 5.5.6** on vegetative practices will serve to stabilize, protect, and mitigate potential impacts within the site. BMPs will be implemented during construction, post-construction, and operational phases of the Project. Screening and tree mitigation efforts are being considered for the western portion of the site along 70th Street South. Due to conversion from barren land to perennials on the western portion of the Preliminary Development Area and site, impacts on wildlife may be beneficial compared to the current cover at the site. Through establishing perennial plants species, the natural landscape will experience a reduction of soil erosion and runoff, improved nutrient cycling, reduction of the use of pesticides and herbicides, and new beneficial habitat for many insect species and ground nesting species during the life of the Project.

5.5.8 Rare and Unique Natural Resources.

Federally Listed Species

The USFWS IPaC portal was reviewed on April 4 2025 (**Appendix J**) for federally endangered and threatened species, candidate species, and designated critical habitat that may occur in the Project site and immediate vicinity.¹⁰¹ The IPaC results identified two federally endangered species, the northern long-eared bat (“NLEB”) (*Myotis septentrionalis*) and the rusty patched bumble bee (“RPBB”) (*Bombus affinis*); one federally proposed endangered species, the tricolored bat (*Perimyotis subflavus*); one federally proposed threatened species, the monarch butterfly (*Danaus plexippus*); and one federally designated as non-essential experimental population, the whooping crane (*Grus americana*), as potentially occurring within or near the site. The Project location overlaps proposed critical habitat for the RPBB. Suitable NLEB and tri-colored bat habitat consists of a variety of forested habitat near water sources.¹⁰⁷ According to the MnDNR

¹⁰⁵ MnDNR. n.d. Important Bird Areas. (available from: <https://www.dnr.state.mn.us/iba/index.html>). Accessed April 2025.

¹⁰⁶ Audubon. 2020. Minnesota Important Bird Areas Interactive Map. (available from: <https://www.arcgis.com/home/webmap/viewer.html?webmap=3b3d225539f8449daf84be6aa89eab50>). Accessed April 2025.

¹⁰⁷ MnDNR. 2018. Rare Species Guide: *Myotis septentrionalis*. (available from: <https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AMACC01150>). Accessed April 2025.

and USFWS, there are no known NLEB or tri-colored bat maternity roost trees or hibernaculum in Scott County; however, the species may still occur within or near the site.¹⁰⁸ Based on site reconnaissance of the site and review of landcover of adjacent properties, though suitable forested habitat exists in limited quantities within the site, no high quality suitable habitat such as trees with loose bark, snags, or otherwise dead trees was observed.

The USFWS adopted National Bald Eagle Management Guidelines to help protect eagle nests and avoid “disturbance” of eagles as required by the BGEPA. Guidance has also been developed to help determine if a project needs an incidental take permit for bald eagles if disturbance cannot be avoided. Land uses in the site are primarily herbaceous vegetation (76.8%), impervious surface and associated areas (21.4%), and cultivated and or planted vegetation (1.8%)⁵⁴ (**Section 5.5.6**). The forested land that is present is primarily sparse oak savanna. Few migratory bird species that use trees or forested areas as habitat will be present due to the limited forest habitat as well as the greater presence of suitable high quality woodland habitat located north of the site along the Minnesota River valley.

State listed Species

The Company submitted a formal MnDNR NHIS review request for potential effects to rare features within the Project site. In a letter dated April 2, 2025, the Natural Heritage Review Team stated that no state-listed endangered or threatened species have been documented in the vicinity of the site (**Appendix J**). Recommendations from the MnDNR in the NHIS letter will be considered by the Company during the pre-construction design and construction phases of the Project.

Rare Species and Native Plant Communities

Rare species, including federal and state listed species, are discussed above. The MnDNR Minnesota Biological Survey (“MBS”) assigns ecologists to map and classify native plant communities throughout the state using plant species, soils, and other site-specific data from vegetation plots. Biodiversity significance ranks are used to prioritize and guide conservation and management of MBS sites. To assign biodiversity significance ranks, MBS sites are grouped and rated for each of Minnesota’s ECS subsections. Ranking sites by subsection helps to highlight the best examples of

¹⁰⁸ MnDNR and USFWS. 2016. Townships Containing Documented Northern Long-eared Bat (NLEB) Maternity Roost Trees and/or Hibernacula Entrances in Minnesota. (available from: https://efotg.sc.egov.usda.gov/references/public/MN/MN_NLNPCEB_Township_List_and_Ma_p_4-1-16.pdf). Accessed April 2025.

Minnesota's rare species and native plant communities in all of the state's diverse landscapes. There are four biodiversity significance ranks: outstanding, high, moderate, and below.¹⁰⁹

A MBS Site of Biodiversity of Significance and DNR Native Plant Community are located within the site.⁹ Dean's Lake, an MBS Site of High Biodiversity Significance, intersects with 42.7 acres (approximately 63%) of the site. Within the Dean's Lake MBS Site, three dry barren oak savanna (southern), oak subtype native plant communities (native plant community code: Ups14a2) are present within the site. The aforementioned features are depicted on **Map 9**. Additionally, three calcareous fen sites (Savage Fen) were identified approximately 2.8 miles east of the site.⁹

Wildlife Action Network and Minnesota Wildlife Action Plan

Minnesota's State Wildlife Action Plan (2015-2025) proactively addresses the state's conservation needs and defines actions to prevent species from becoming listed under the state endangered species program or the ESA. The plan also entailed revisions to the state's list of Species in Greatest Conservation Need ("SGCN"). SGCN are native animals with rare, declining, or vulnerable populations. All state and federally listed species that occur in Minnesota are automatically considered to be SGCN.¹¹⁰

The Wildlife Action Network was developed as part of the 2015-2025 State Wildlife Action Plan revision to assist users in focusing conservation efforts. The Wildlife Action Network is comprised of 10 GIS data layers that represent quality terrestrial and aquatic habitats, buffers, and corridors across the state that support SGCN. The site is entirely within a medium-high rank area.¹¹¹

Lakes, Wetlands, Stream, and Rivers

No surface waters are present within the Preliminary Development Area. One small wetland was delineated in the northern portion of the site and will not be impacted. See

¹⁰⁹ MnDNR. 2009. Guidelines for Assigning Statewide Biodiversity Significance Ranks to Minnesota County Biological Survey Sites. (available from: https://files.dnr.state.mn.us/eco/mcbs/biodiversity_significance_ranking.pdf). Accessed April 2025.

¹¹⁰ MnDNR. 2022. Minnesota's Wildlife Action Plan, 5-Year Report. (available from: <https://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/mnwap/wap-5-yr-report.pdf>). Accessed April 2025.

¹¹¹ MnDNR. 2015 (Updated 2024). MNWAP Wildlife Action Network [Shapefile] (available from: <https://gisdata.mn.gov/dataset/env-mnwap-wildlife-action-netwrk>). Accessed April 2025.

Section 5.5.5 (Surface Waters) and **Map 8** for additional information on water resources.

Large Block Habitats

Large blocks of habitat, such as forests or grasslands, can provide increased diversity of species, higher species populations, and more resilient and complex ecological communities. Construction of projects within large block habitats may cause habitat loss and fragmentation, which is counterproductive to area-sensitive species for nesting, food, and population success.

The Project is sited on barren and limited wood lands and is not adjacent to any potential large block habitats.⁹ Significant large block habitat is located approximately 0.5 miles north of the site within and along the Minnesota River valley.

Public Conservation and Recreation Lands

A review of publicly available information including, but not limited to, the Minnesota Recreation Compass, MnDNR & USFWS waterfowl protection area maps, snowmobile clubs, City and County parks, and public and private golf courses was completed to identify any public conservation or recreation lands.⁹ No public conservation or recreation lands are present within the site.⁹ Quarry Lake Park is located immediately west of the Project, and the Southbridge Community Park and Open Space is located approximately 0.1 miles south of the Project, across US 169 (**Map 6**). Refer to **Section 5.2.9** for additional discussion of recreational lands.

Properties in Government Programs or Conservation Easements

No land held in government programs or conservation easements was identified in the site.⁹ Quarry Lake Park, a local park owned by the City of Shakopee is located immediately west of the Project. Additionally, the Southbridge Community Park and Southbridge Open Space, owned by the City of Shakopee, is located approximately 0.1 miles south of the site. The site is currently barren land, scattered woodlands, and an electrical substation. No other conservation easements are present in the vicinity of the Project site.¹¹²

¹¹² National Conservation Easement Database. 2025. NCED GIS Viewer. (available from: <https://site.tplgis.org/NCED/planningapp/>). Accessed April 2025.

Native Prairie

Minn. Stat. § 84.02, subd. 5 defines native prairie as land that has never been plowed where native prairie vegetation originating from the site currently predominates or, if disturbed, is predominantly covered with native prairie vegetation that originated from the site. There is no native prairie identified at the site.

Native Plant Communities

One DNR native plant community was identified in the site (**Map 9**). Dean's Lake, an MBS site of high biodiversity significance (discussed above) contains three dry barrens oak savanna (southern), oak subtype native plant communities (Native Plant Community Code: Ups14a2).⁹

Impacts and Mitigation Measures

Federally Listed Species

No impacts to federally protected species are anticipated throughout construction and operation of the Project. The NLEB and tricolored bat Range wide Determination Key was completed on April 16, 2024, and yielded a technical assistance letter determining that the Project may affect the NLEB and tricolored bat. The RPBB determination key was completed on April 16, 2025, and yielded a technical assistance letter determining that the Project may affect the RPBB. The Minnesota-Wisconsin Federal Endangered Species Determination was completed and a technical assistance letter dated April 4, 2025, (Project Code: 2025-0078820) was generated denoting a no-effect determination for the monarch butterfly and whooping crane (**Appendix J**). Xcel Energy anticipates further coordination with USFWS for concurrence that the Project is unlikely to adversely affect the NLEB, tricolored bat, and RPBB based on general lack of high-quality or otherwise suitable habitat. Impacts to bald eagles are not anticipated from the Project as there is no suitable nesting habitat within the site and no stick nests were observed during a March 2025 site visit during leaf off conditions.

State Listed Species

No impacts to any Minnesota State endangered, threatened, or special concern species are anticipated throughout construction or operation of the Project. The site's current condition is more than 50% barren with impervious surface and wood patches scattered throughout. No native prairies exist within the site. The MnDNR formal response to

the NHIS request for the Project was received on April 2, 2025 (**Appendix J**). The formal review identified seven state-listed species of special concern in the vicinity of the Project:

- Forster's Tern (*Sterna forsteri*);
- Gophersnake (*Pituophis catenifer*);
- Lark Sparrow (*Chonestes grammacus*);
- Plains Hog-nosed Snake (*Heterodon nasicus*);
- Plains Pocket Mouse (*Perognathus flavescens*);
- Regal Fritillary (*Argynnis idalia*); and
- Rhombic Evening Primrose (*Oenothera rhombipetala*).

The Company will review MnDNR species guides for each of these species ahead of construction activities commencing and develop BMPs with construction crews as applicable to minimize and avoid impacts to species of species concern. Additionally, BMPs outlined in **Sections 5.5.4** and **5.5.6** concerning erosion control and vegetation will serve to stabilize, protect, and mitigate negative impacts to the natural landscape surrounding the site. The SWPPP will also be implemented during construction of the Project.

Native Prairie

Despite the site's location within a MnDNR regionally wide native plant community (**Map 9**), the site is comprised of barren land and sparse forested areas, with no native prairie present.⁹ Accordingly, no impacts or mitigative measures are proposed.

5.6 Unavoidable Effects

The preliminary design of the Project has been developed to avoid impacts to environmental resources to the greatest extent practicable. Where complete avoidance is not feasible, potential impacts will be minimized through the implementation of appropriate mitigation measures. A comprehensive analysis of the anticipated environmental impacts and corresponding mitigation strategies is provided in **Sections 5.1 through 5.8** of this Application. The unavoidable impacts that will be mitigated but not fully avoided are summarized below. These impacts are expected to occur primarily during the construction phase and are anticipated to subside upon its completion.

Unavoidable impacts related to the Project that will last only as long as the construction period include:

- Noise and vibration emitted from vehicles and equipment during construction that will be audible to neighboring landowners;
- Air emissions from the exhaust of diesel and gasoline-powered equipment and vehicles;
- Increased traffic on roads within and adjacent to the site;
- Waste generation associated with material packaging;
- Minor air quality impacts due to fugitive dust;
- Potential for soil erosion; and
- Potential disturbance to, and displacement of, some species of wildlife and associated habitat.

Unavoidable impacts related to the Project that will last as long as the life of the Project will include:

- Introduction of additional industrial structures in an industrial area, which will be visible from local roadways and parcels;
- Changes in land cover and vegetation from barren land, grassland, and forested land to an ESS facility (7.8 acres of permanent infrastructure) with perennial vegetation in approximately four acres of the site not housing Project infrastructure or infrastructure for the existing Blue Lake Plant. New tree plantings for screening and mitigation purposes will alleviate the proposed land use changes to more industrial land uses; and
- Creation of new impermeable surface for the ESS unit area, parking area, substation, and access roads. Surface water will be managed as described in **Section 5.5.5**.

5.7 Irreversible and Irretrievable Impacts

Irreversible, irretrievable, and unavoidable impacts or commitment of resources refers to impacts on, or losses to, resources that cannot be avoided, recovered, or reversed. Examples could include the permanent conversion of wetlands and loss of cultural resources, soils, wildlife, or agricultural production.

The term “irreversible” describes the loss of future options. It applies primarily to the impacts of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity, which are renewable only over long periods of time.

The term “irretrievable” describes the loss of production, harvest, or use of natural resources. For example, if land designated for industrial use is developed for non-industrial purposes, some or all of the area's industrial production capacity may be

irretrievably lost while the land is temporarily repurposed. Although the industrial production loss is irretrievable during that period, the change in land use is not necessarily irreversible.

Land required for the Project would be committed to hosting ESS units and associated facilities for the life of the Project, which is expected to be up to 20 years. Although the entire approximate 70-acre site would not be developed, 11.9 acres of land within the site would be developed for Project infrastructure. Of the 11.9 acres, approximately 7.8 would be used to house permanent infrastructure. This land would be unavailable for other uses during that time. However, after the Project reaches the end of its operational life, and if the decision is made to decommission it and restore the site, the land would again be available for other uses.

The Project will involve certain irreversible and irretrievable commitments of resources, primarily associated with construction activities. These include the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable materials. Some resources, such as fossil fuels, represent irretrievable commitments due to their non-renewable nature. Others, such as water, may be considered irreversible where recovery is not feasible. Certain materials used in construction may be partially recoverable or recyclable at the end of the Project's operational life; however, the initial commitment of these resources is considered irretrievable. Additionally, the dedication of labor and financial resources to the development, construction, and operation of the Project constitutes an irretrievable commitment.

No wetland or other sensitive land conversion or alteration will be made during any stage of the Project; therefore, no foreseen irreversible impacts are addressed.

5.8 Cumulative Potential effects

Cumulative impacts are combined, incremental effects of human activity. While an individual activity may be insignificant by itself, minor impacts in combination with other actions may cause a larger issue in a region or to an important resource.

A review of the Scott County website¹¹³, City of Shakopee website¹¹⁴, and Minnesota Environmental Quality Board website¹¹⁵ did not reveal any projects proposed with

¹¹³ Scott County. 2025. Construction Projects. (available from: <https://www.scottcountymn.gov/678/Construction-Projects>). Accessed April 2025.

¹¹⁴ City of Shakopee. 2025. Current Development Map. (available from: <https://www.shakopeemn.gov/business-development/current-development>). Accessed April 2025.

¹¹⁵ MPCA. 2025. Environmental Review Projects. (available from: <https://pca-gis02.pca.state.mn.us/EQB/>). Accessed April 2025.

similar timing or within one mile to the site that would be expected to interact negatively or create significant cumulative impacts with the proposed Project. The Southwest Logistics Center, a 505,000 square foot facility located immediately north of the site, was completed and placed into operation in 2025.¹¹⁴

According to the MISO Generator Interconnection Queue, the Company’s Blue Lake ESS is the only active MISO project in Scott County.¹¹⁶

State and County level construction projects listed pertain to road or other infrastructure repairs and general maintenance.¹¹⁷ During the construction phase of the Project, an increased amount of traffic is to be expected with worker and equipment transport travelling similar routes. Should the timing of construction be similar between projects, coordination with appropriate parties on haul route traffic volumes will be conducted to reduce significant impacts on travel in the area (see **Table 5.8**). Minimal long term cumulative impacts are anticipated.

Table 5.8: Other Projects in Close Proximity and Timeframe

No.	Project Sponsor/Title	General Project Location	Timeframe / In-service Date	Project Type
1	MnDOT / Hwy 169 and Hwy 282/County Road 9	Jordan, MN Southwest of the site.	2025-2027	Road Work
2	Sand Companies / Trio at Southbridge	Shakopee, MN Southeast of the site.	2025-2026	Apartment Complex
3	Shakopee / 2025 Full-Depth Pavement Reconstruction	Shakopee, MN Northeast of the site	2025	Street Improvement

¹¹⁶ MISO. 2025. Interactive Queue. (available from: <https://giqueue.misoenergy.org/PublicGiQueueMap/index.html>). Accessed April 2025.

¹¹⁷ MnDOT. 2024. Metro Minnesota State Highway and Bridge Projects. (available from: <https://www.dot.state.mn.us/roadwork/#gsc.tab=0>). Accessed April 2025.

6. AGENCY AND PUBLIC OUTREACH

As part of pre-Application efforts, the Company engaged with local, state, and federal regulatory stakeholders to introduce the Project, request comments, and solicit feedback. Additionally, the Company contacted the eleven recognized Minnesota Tribal Nations for comments. The Company will continue to engage with interested stakeholders throughout the Site Permit Application process.

In letters dated March 7, 2025, the Company sent a Project introduction letter and map to local agencies and tribal contacts, offering to meet to further discuss the Project and generally seeking any input, as applicable (**Appendix C**). Similarly, on March 14, 2025, the Company sent a Project introduction email and accompanying map to federal, state, and local agencies offering to meet to further discuss the Project and generally seeking any input, as applicable (**Appendix C**). The contact list to whom the Project introduction letters and emails were sent as well as responses received at the time of this Application submittal are included in **Table 6.0** below.

Table 6.0: Summary of Agency and Tribal Coordination

Agency	Date Notification Sent	Response Summary Receipt
Federal		
EPA	March 14, 2025	No response
U.S. Army Corps of Engineers	March 14, 2025	Response on March 17 denoting no anticipated coordination needed at this time
USFWS	March 14, 2025	Response on March 19 recommending the Project utilize the IPaC.
State		
Minnesota Board of Water and Soil Resources	March 14, 2025	No response
Minnesota Department of Agriculture	March 14, 2025	No response
MDH	March 14, 2025	No response
Minnesota Department of Labor & Industry	March 14, 2025	No response
Minnesota Department of Public Safety	March 14, 2025	Response on March 17 seeking confirmation there will be no natural gas infrastructure associated with the Project.
Minnesota Department of Revenue	March 14, 2025	No response
Minnesota Indian Affairs Council	March 14, 2025	No response

MnDNR	March 14, 2025	No response
MnDOT	March 14, 2025	Response on March 17 denoting no anticipated coordination need at this time
MPCA	March 14, 2025	No response
Tribal Nations		
Bois Forte Band of Chippewa	March 7, 2025	No response
Fond du Lac Band of Lake Superior Chippewa	March 7, 2025	No response
Grand Portage Band of Ojibwe	March 7, 2025	No response
Leech Lake Band of Ojibwe	March 7, 2025	Response on May 10 denoting there are no recorded historic properties within the site.
Lower Sioux Indian Community	March 7, 2025	No response
Mille Lacs Band of Ojibwe	March 7, 2025	No response
Prairie Island Indian Community	March 7, 2025	No response
Red Lake Nation	March 7, 2025	No response
Shakopee Mdewakanton Sioux Community	March 7, 2025	Response on March 18 asking to be provided a cultural resource assessment once completed.
Upper Sioux Community	March 7, 2025	No response
White Earth Nation	March 7, 2025	No response
Local		
City of Shakopee	March 7, 2025	No response
Lower Minnesota Watershed District	March 7, 2025	No response
Scott County	March 7, 2025	Response on March 13 seeking traffic volumes and asking for a preliminary site plan
Southwest Regional Development Commission	March 14, 2025	No response

6.1 Meetings

In addition to the above outreach and responses, the Company met with the City of Shakopee on March 12, April 16, and May 28, 2025, to present the Project, discuss the Commission permitting process, and capture any questions or concerns from the City. As a result of these meetings, The Company is planning to conduct a tree inventory survey in Q3 2025 within the site and will coordinate with the City of Shakopee on a

tree screening plan along the 70th Street South corridor to address both screening and tree replacement concerns expressed by the City. As noted in **Section 1.4.2**, on June 4, 2025, the City of Shakopee determined a local permit is not required for the gen-tie (**Appendix C**).

As requested by the City of Shakopee, the Company is providing a Project information sheet regarding fire suppression practices and ERP that the City of Shakopee will provide to the local emergency responders. A formal training session with local emergency responders regarding the ERP is planned prior to construction commencing. The Company plans to continue community outreach through meetings, advertisements, and traditional public engagement activities.

The Company met with staff from the Commission and Minnesota Department of Commerce on March 14, 2025 to present the Project and discuss Application processes and timeframes.

The Company met with Magellan on May 21, 2025 to discuss the Project in comparison to Magellan's natural gas pipeline and valve site that are immediately east of the Project site. Magellan requested that the Project maintain a minimum setback of 100 feet from their pipeline infrastructure, which has been met by the current Project design.