Site Permit Application and Environmental Assessment for the Cottage Grove BESS Project

Washington County, Minnesota

Submitted to:

Minnesota Public Utilities Commission

Docket Number: IP7180/ESS-26-184

Submitted by:

LSP CG Storage, LLC
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Abbreviation/Term	Definition
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 22	Eastern Tallgrass Prairie Bird Conservation Region
BESS	Battery Energy Storage System
BESS Facility	The BESS Facility includes all of the components of the Project, including BESS cells and enclosures, inverters, project substation, security fencing, access roads, stormwater management, and laydown yard.
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
BWSR	Board of Water and Soil Resources
CAA	Clean Air Act
Census Tract	Census tracts crossed by the Project Site.
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
COD	Commercial operations date
Commission or MPUC	Minnesota Public Utilities Commission
CREC	Controlled recognized environmental condition
CSAH	County State Aid Highway
CSW	Construction Stormwater
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DC	Direct Current
DEED	Minnesota Department of Employment and Economic Development
DNR	Minnesota Department of Natural Resources
DWSMA	Drinking Water Supply Management Area
EA	Environmental Assessment

Abbreviation/Term	Definition
ECS	Ecological Classification System
EIP	Energy Infrastructure Permitting
EMF	Electric and magnetic field
EPA	U.S. Environmental Protection Agency
EPC	Engineering, Procurement, and Construction
ERP	Emergency Response Plan
ESS	Energy Storage System
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GHG	Greenhouse Gas
GIA	Generator Interconnection Agreement
GIS	Geographic Information System
HVAC	Heating, ventilation, and air conditioning
IEEE	Institute of Electrical and Electronics Engineers
IFC	International Fire Code
IPaC	Information for Planning and Consultation
kV	Kilovolt
L_{10}	10% of any hour
L_{50}	50% of any hour
L_{eq}	Equivalent Sound Level
LFP	Lithium Iron Phosphate Lithium-ion Battery
LSP CG Storage or Applicant	LSP CG Storage, LLC
MBS	Minnesota Biological Survey
MBTA	Migratory Bird Treaty Act
MDA	Minnesota Department of Agriculture
MDH	Minnesota Department of Health
MDLI	Minnesota Department of Labor and Industry
mG	MilliGauss
Minn. R.	Minnesota Rules
Minn. Stat. §	Minnesota Statutes Section
MISO	Midcontinent Independent System Operator

Abbreviation/Term	Definition
MLCCS	Minnesota Land Cover Classification System
MnDOT	Minnesota Department of Transportation
MNRRA	Mississippi National River and Recreation Area
MnSHIP	Minnesota Statewide Historic Inventory Portal
MPCA	Minnesota Pollution Control Agency
MPT	Main Power Transformer
MPUC Guidance	MPUC's *Draft Application Guidance for Large Energy Infrastructure Facilities in Minnesota*
MRCCA	Mississippi River Corridor Critical Area
MUSA	Metropolitan Urban Service Area
MVT	Medium voltage transformer
MW	Megawatt
MWac	Megawatts Alternating Current
MWh	Megawatt hours
N_2O	Nitrous Oxide
NAC	Noise Area Classification
NFPA	National Fire Protection Association
NIEHS	National Institute of Environmental Health Sciences
NMC	Nickel Manganese Cobalt Oxide Lithium-ion Battery
NO_2	Nitrogen Dioxide
NPC	Native Plant Community
NPDES/SDS	National Pollutant Discharge Elimination System/State Disposal System
NPMS	National Pipeline Mapping System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	Operations and Maintenance
O_3	Ozone
OSA	Office of the State Archaeologist
OSHA	Occupational Safety and Health Administration
PanCentral	PanCentral CGC Holdings LLC
Panamint	Panamint Capital LLC
PCS	Power conversion systems

Abbreviation/Term	Definition
PFAS	poly-fluoroalkyl substances
PM	Particulate Matter
POI	Point of Interconnection
PPA	Power Purchase Agreement
Preliminary Development Area	The approximately 3.3 acres of land within the Project Site where the Applicant proposes to build the Project facilities, including all areas within the BESS Facility fence line, grading areas, permanent stormwater infiltration basins, and access roads. The Preliminary Development Area may also include additional land needed to construct underground culvert to manage stormwater.
Project	The Cottage Grove BESS Project, an up to 80 MWac capacity BESS Facility and associated systems in Cottage Grove, Washington County, Minnesota.
Project Area	One mile from the boundary of the Project Site
Project Site	Approximately 6.8 acres of privately-owned land for which LSP CG Storage proposes to construct and operate the Project.
Project Vicinity	1,600 feet from the boundary of the Project Site
PWI	Public Waters Inventory
RCPs	Representative Concentration Pathways
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
Region	Washington County
ROI	Region of Influence
ROW	Right-of-way
SCADA	Supervisory Control and Data Acquisition
SGCN	Species in Greatest Conservation Need
SHPO	Minnesota State Historic Preservation Office
SNAs	State Scientific and Natural Areas
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SSURGO	Soil Survey Geographic Database
SWAP	State Wildlife Action Plan
SWCD	Soil and Water Conservation District
SWPPP	Stormwater Pollution Prevention Plan
UL	Underwriters Laboratories

Abbreviation/Term	Definition
UM	Urban Mixed
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VMP	Vegetation Management Plan
WCA	Minnesota Wetland Conservation Act
Westwood	Westwood Professional Services, Inc.
WHPA	Wellhead Protection Area
WMA	Wildlife Management Area
Xcel Energy	Xcel Energy dba Northern States Power (NSP)

1.0 INTRODUCTION

LSP CG Storage, LLC (LSP CG Storage or Applicant) proposes to construct and operate the Cottage Grove BESS Project (Project), a battery energy storage system (BESS) and associated facilities (BESS Facility) with a nominal power rating of up to 80 megawatts (MW) alternating current (AC) with approximately 320 megawatt-hours (MWh) of nameplate capacity in Cottage Grove, Washington County, Minnesota (Map 1 and Map 2). The Project will be located on industrial land entirely within the existing LSP Cottage Grove Cogeneration Facility. The Cogeneration Facility is 265 MW and has been operating since 1997. The Applicant is anticipating construction to begin in Q2 2027 with commercial operation in Q2 2028.

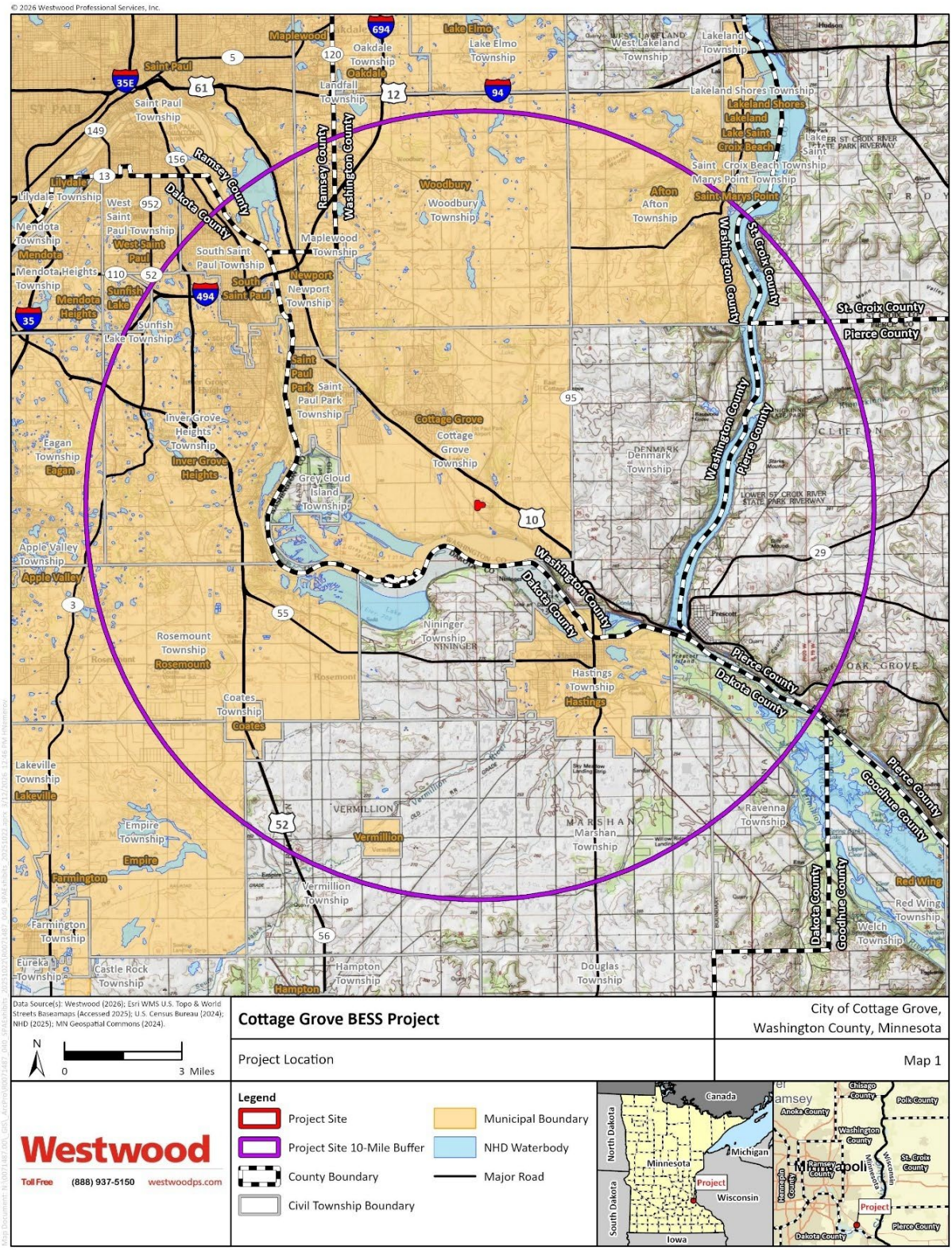
Based on the preliminary site plan, the Applicant expects the Project to occupy approximately 3.3 acres (Preliminary Development Area) within a 6.8-acre area (Project Site). The Project Site refers to all the land under a shared facilities agreement and lease to accommodate the Project. The Preliminary Development Area will include land that will remain permanently developed for the duration of the Project. The Preliminary Development Area will include battery storage enclosures with integrated inverters, medium voltage skids with transformers, a substation, underground electrical collection lines, storage and parking areas, one new access road, fencing, an infiltration trench and basin, a laydown yard, and other minor equipment and subcomponents that are typical of a BESS Facility (Map 3). All Project infrastructure will be located within the Preliminary Development Area. The Project will interconnect to the existing 115 kilovolt (kV) transmission system via the existing LSP Cottage Grove Cogeneration Facility substation bus bar. The Applicant plans to use existing facilities in the LSP Cottage Grove Cogeneration Facility for operations and maintenance (O&M) activities. See Section 3.0 for a complete description of the Project.

Construction of the Project requires a Site Permit from the Minnesota Public Utilities Commission (MPUC or Commission). As an energy storage system (ESS), the Project qualifies for the Standard Review process pursuant to the Minnesota Energy Infrastructure Permitting Act (Minnesota Statutes [Minn. Stat.] § 216I.07).

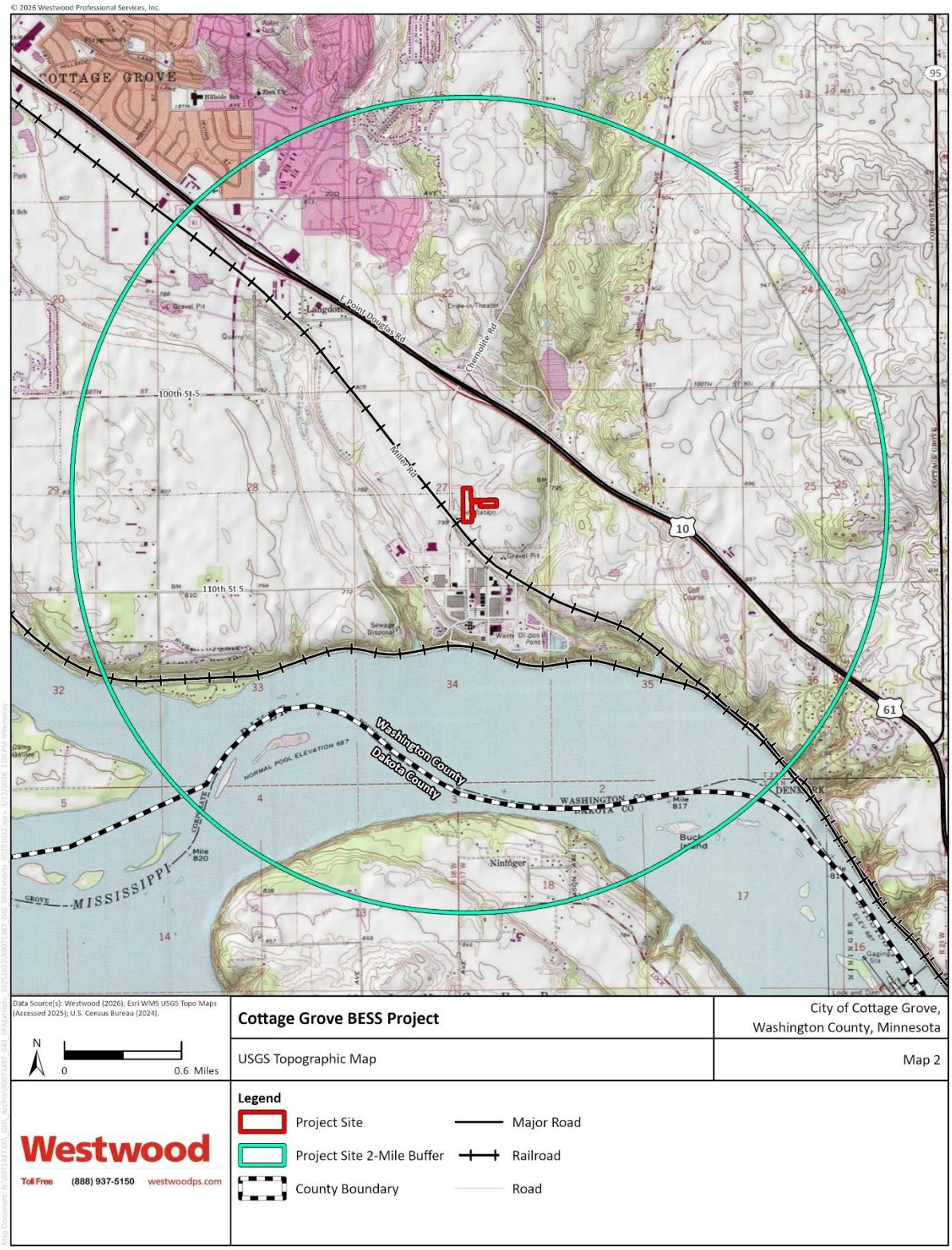
This Site Permit Application (Application) was prepared based on Minn. Stat. Chapter 216I (Minnesota Energy Infrastructure Permitting Act), the MPUC's *Draft Application Guidance for Large Energy Infrastructure Facilities in Minnesota* (MPUC Guidance) dated April 2025,[1] the MPUC's *Guidance for successful Tribal engagement* dated July 2025,[2] and feedback from MPUC Energy Infrastructure Permitting (EIP) staff provided in Appendix A. Per MPUC Guidance, maps are provided in the text throughout the Application and in Appendix B.

[1] Minnesota Public Utilities Commission. Draft Application Guidance for Large Energy Infrastructure Facilities in Minnesota. April 2025. https://puc.eip.mn.gov/sites/default/files/2025-06/DRAFT-LEI_Guidance_Draft_06-25-2025.pdf. Accessed December 2025.

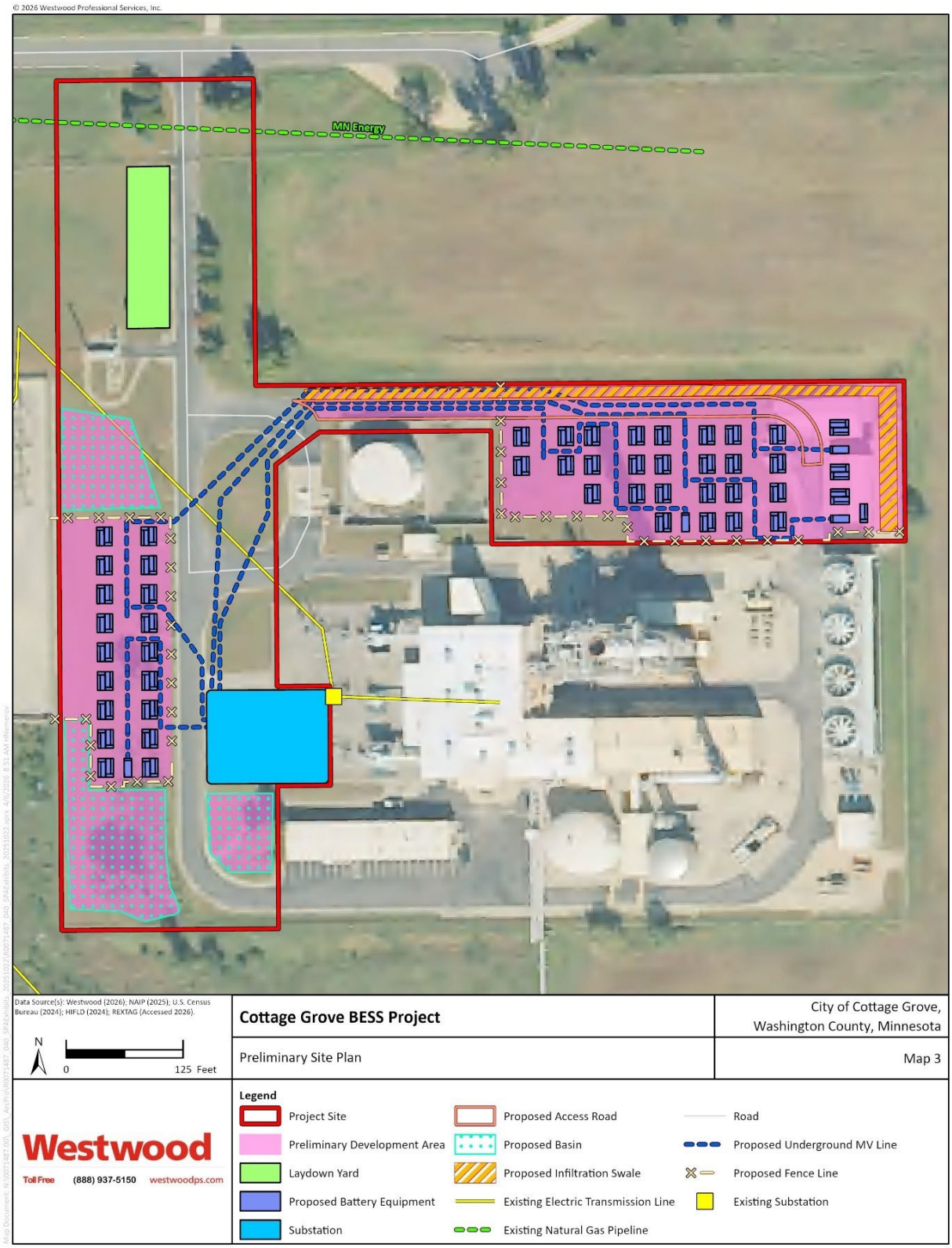
[2] Minnesota Public Utilities Commission. Guidance for successful Tribal engagement. July 2025. https://puc.eip.mn.gov/sites/default/files/2025-06/Guidance%20for%20successful%20Tribal%20engagement.pdf. Accessed January 2026.



Map 1: Project Location



Map 2: USGS Topographic Map



Map 3: Preliminary Site Plan

1.1 Purpose and Need

The Project is a planned 80 MW / 320 MWh battery storage system designed to provide capacity and stability to the grid. The energy stored by the Project will be sold to Xcel Energy under a Power Purchase Agreement (PPA) recently approved by the MPUC. [3][4] In reviewing the PPA, the Department of Commerce (Department) recommended the MPUC approve the PPA. The Department noted that based on the PPA pricing and externalities modeling the "Cottage Grove BESS decreases Xcel's total modeled CO2 emissions, and thus regulatory and environmental costs."[5] The Project will provide cost-effective energy storage to Xcel Energy's customers by providing specific energy, capacity, and ancillary services to meet Xcel Energy's resource needs. Storage of energy generated at times of surplus that can then be released at times of high demand also off-sets the need for additional peak generating capacity.

The Project will provide up to 80 MW of charging (consuming power from the grid) and discharging (contributing 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 14,000 households for up to four hours based on the average household's annual electricity consumption.[6] The Project is being developed, designed, and permitted to meet or, to the extent practicable, exceed applicable state and local design and operating requirements and be consistent with current industry best practices. Battery storage is essential for an efficient, low-cost, and reliable electric grid. 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.

The Project will also benefit the City of Cottage Grove through investment in construction spending and long-term property and business tax receipts, with minimal operational demand on public service infrastructure.

1.2 Applicant Information

As depicted in the organization chart below, LSP CG Storage is a limited liability company authorized to do business in Minnesota. LSP CG Storage is a wholly owned direct subsidiary of PanCentral CGC Holdings LLC (PanCentral). Ultra Capital Sustainable Infrastructure Fund II LP. is a 100% class A owner of PanCentral, Littletown Holdings is 100% class B owner of PanCentral. PanCentral owns 100% of LSP Cottage Grove L.P., the existing cogeneration facility entity, and LSP CG Storage, LLC, the Project entity and Applicant. Panamint is providing management services to PanCentral.

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4 In the Matter of Northern States Power Company, doing business as Xcel Energy, Petition for Approval of a Purchased Power Agreement with Panamint for the Cottage Grove Battery Energy Storage System Project, Docket Nos. E002/CN-23-212, E002/RP-24-67 (Order dated March 12, 2026).

5 *In the Matter of Northern States Power Company, doing business as Xcel Energy, Petition for Approval of a Purchased Power Agreement with Panamint for the Cottage Grove Battery Energy Storage System Project*, Docket Nos. E002/CN-23-212, E002/RP-24-67, Order (March 12, 2026).

6 U.S. Energy Information Administration. 2024 Average Monthly Bill-Residential. https://www.eia.gov/electricity/sales_revenue_price/pdf/table_5A.pdf.

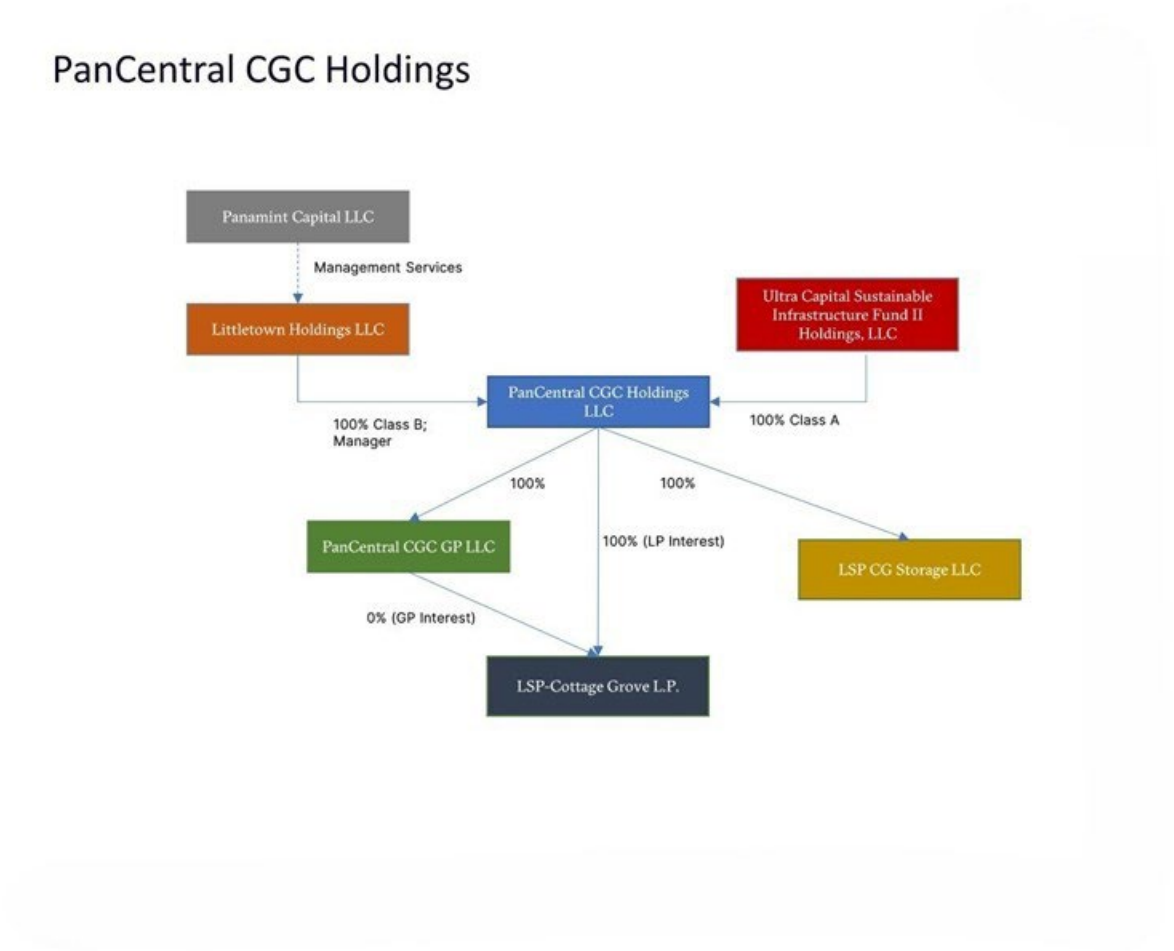

Figure 1: PanCentral CGC Holdings LLC Organization Chart

Panamint is a women-led energy investment company enabling the clean energy transition through the development and installation of renewable energy and management of renewable and conventional energy projects. Panamint currently manages over 3,000 MWs of operating and development-stage conventional and renewable power assets, and is also developing over five projects, totaling over 580 gigawatt hours of capacity annually, across 3 states in three regions of the United States. Headquartered in Incline Village, Nevada, Panamint is comprised of over 20 seasoned industry professionals across development, asset management, and corporate functions and aims to support sustainability and revitalize legacy energy infrastructure.

Panamint develops, owns, operates, and optimizes renewable energy including BESSs with the aim of reducing grid volatility, increasing system resiliency, and helping minimize carbon emissions in a responsible and efficient way.

1.3 Project Ownership

LSP CG Storage will own, operate, and maintain the Project following the start of the commercial operations date (COD), which is anticipated to be in Q2 2028. While not planned at this time, LSP CG

Storage reserves the right to sell or assign the Project to another qualified entity at any time before, during, or after the Project is constructed. Any sale or assignment of the Site Permit may require approval by the Commission. Any future buyer or assignee would be required to meet Site Permit conditions.

1.4 Permittee and Project Contact

The permittee for the Project will be:

LSP CG Storage, LLC
917 Tahoe Boulevard, Suite 202
Incline Village, NV 89451

The contact persons regarding this Application are:

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Associate, Development
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1.5 Pre-Application Coordination

This section identifies the pre-application coordination required under Minn. Stat. § 216I.05, subd. 5 and subd. 6.

1.6 Pre-Application Coordination with MPUC

As required by Minn. Stat. § 216I.05, subd. 6, applicants requesting a site or route permit from the Commission must provide a draft of the application, including the required environmental assessment (EA) information, to Commission Staff prior to filing the application. On April 6, 2026, the Applicant provided a draft of this Application to the MPUC EIP staff for their review and comment. On April 16, 2026, the Applicant and MPUC EIP staff met to discuss the Project and the MPUC permitting process. The MPUC EIP staff review focused on application completeness and clarifications that might help the MPUC's review of the Application. The MPUC's review of the draft Application, and the Applicants response, are provided in Appendix A. An application completeness checklist is provided in Appendix C.

1.6.1 Pre-Application Coordination with Local, State, and Federal Agencies

On November 20, 2025, the Applicant sent notification letters and a Project location map to the local units of government within the Project Site, state technical resource agencies, and federal agencies. Consistent with Minn. Stat. § 216I.05, subd. 5, the notification described the proposed Project, requested comments, and provided recipients with the opportunity to request a pre-application coordination meeting. The agency pre-application notification letters and responses are provided in Appendix D. A summary of all agency coordination and correspondence is provided in Table 1.6-1 along with dates of correspondence.

Table 1.6-1: Agency Pre-Application Coordination

Agency	Response Date and Summary
Federal	
U.S. Army Corps of Engineers (USACE), St. Paul District	November 20, 2025 – Notification email, letter, and project location map sent. November 25, 2025 – The USACE responded to the Project introduction letter indicating that a full review cannot be provided until a detailed plan is received.
U.S. Fish and Wildlife Service (USFWS), Minnesota Wisconsin Field Office	November 20, 2025 – Notification email, letter, and project location map sent. November 20, 2025 – USFWS responded to the Project introduction letter and provided recommendations to complete an Information for Planning and Consultation (IPaC) as well as other general wildlife recommendations.
Federal Aviation Administration (FAA)	November 20, 2025 – notification email, letter, and project location map sent. November 20, 2025 – FAA responded to the Project introduction letter and provided information on nearby airports and recommended filing at least one high point of the development.
State	
Minnesota State Historic Preservation Office (SHPO)	November 20, 2025 – Notification email, letter, and project location map sent. December 26, 2025 – SHPO provided a letter recommending an archaeological literature review and survey assessment of the Project and reviewing the Minnesota Statewide Historic Inventory Portal (MnSHIP).
Board of Water and Soil Resources (BWSR)	November 20, 2025 – Notification email, letter, and project location map sent.
Minnesota Department of Natural Resources (DNR)	November 20, 2025 – Notification email, letter, and project location map sent. March 16, 2026 – The Applicant met with the DNR to discuss the Project and provide additional details. The DNR did not raise any additional concerns that were not included within the DNR Natural Heritage Information System response letter. No response to date.

Agency	Response Date and Summary
Minnesota Pollution Control Agency (MPCA)	November 20, 2025 – Notification email, letter, and project location map sent. December 2, 2025 – MPCA responded stating that they will not review the notification letter and will review the fully fledged environmental document once completed. February 12, 2026 - Westwood responded stating that the Application will note the MPCA plan to review the environmental assessment when it is filed along with the Site Permit Application.
Minnesota Department of Agriculture (MDA)	November 20, 2025 – Notification email, letter, and project location map sent. No response to date.
Minnesota Department of Transportation, (MnDOT)	November 20, 2025 – Notification email, letter, and project location map sent. December 17, 2025 – MnDOT responded to the Project introduction letter and provided information on the turned back portions of US 10/US 61. December 19, 2025 – Westwood responded to MnDOT stating we will provide an update should project design be changed to impact a MnDOT right-of-way (ROW) and that the Project Manager will coordinate with MnDOT regarding travel plans and any potential oversize/overweight permitting requirements, as applicable.
Minnesota Department of Employment & Economic Development (DEED)	November 20, 2025 – Notification email, letter, and project location map sent. No response to date.
Minnesota Department of Health (MDH)	November 20, 2025 – Notification email, letter, and project location map sent. No response to date.
Local/Regional	
Metropolitan Council	November 20, 2025 – Notification email, letter, and project location map sent. December 18, 2025 – The Metropolitan Council responded with a letter providing comments and recommendations for consideration. February 12, 2026 – Westwood responded confirming receipt of the response from the Metropolitan Council and clarified the topics for consideration within the response letter will be addressed in the Site Permit Application.

Agency	Response Date and Summary
Washington County	November 20, 2025 – Notification email, letter, and project location map sent. November 20, 2025 – Washington County Public Works Department responded requesting additional detail regarding project access to determine impacts to County Road 19A. November 20, 2025 – Westwood responded to the County Public Works Department providing information regarding the Project utilizing the existing access and stating that no additional access from county-managed roads would be constructed. December 12, 2025 – A different member of the Washington County Public Works responded indicating that the Project is next to a Washington County ROW and provided the ROW policy for the county.
City of Cottage Grove	November 20, 2025 – Notification email, letter, and project location map sent. November 20, 2025 – The Cottage Grove Fire Chief responded confirming receipt of the notice. November 20, 2025 – The Fire Marshal responded to the notice stating they have no specific questions but stated that they expect the project to adhere to NFPA codes. December 1, 2025 – Westwood provided information on fire codes and safety protocols for the Project to the Fire Marshal. November 25, 2025 – The Community Development Director requested additional information regarding the city zoning requirements. December 15, 2025 – Westwood provided additional project details regarding the permitting process for the Project to the Community Development Director. December 19, 2025 – Westwood responded and provided the Community Development Director with the current 10% design of the Project. Westwood stated that the Project Manager will share the 30% design. February 24, 2026 – Westwood sent the 30% design to the Community Development Director. March and April 2026 – Additional discussions between the City and Applicant representatives on community benefits and related issues. May 2026 – The Applicant executed a Host Community Fee letter agreement with the City for the Project.

1.6.2 Tribal Coordination

Minn. Stat. § 216I.05, subd. 5, requires applicants to provide notice to Minnesota Tribal governments, as

defined under Minn. Stat. § 10.65, subd. 2. On November 20, 2025, the Applicant sent notification letters and a Project location map to 11 Tribal governments. Consistent with Minn. Stat. § 216I.05, subd. 5, the notification described the proposed Project, requested comments, and provided recipients with the opportunity to request a pre-application coordination meeting. The tribal pre-application notification letters and responses are provided in Appendix E.

On January 14, 2026, subsequent email notifications were provided to those tribes that had not yet responded. On January 27, 2026, calls were made to those tribes that had not yet responded and voicemails left as applicable. On May 29, 2026, an additional follow up email as well as a physical letter sent using certified mail were sent to the remaining tribes that had not provided comments. A summary of all Tribal coordination and correspondence is provided in Table 1.6-2 along with dates of correspondence.

Table 1.6-2: Tribal Coordination

Tribal Government	Response Date and Summary
Lower Sioux Indian Community	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. Westwood was not able to reach the recipient. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice. No response to date.
Upper Sioux Community	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. January 27, 2026 – The Upper Sioux Community responded to the notification email recommending an archaeological survey. January 30, 2026 – Westwood responded and sent the Phase I Archaeological Reconnaissance Survey.
Prairie Island Indian Community	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. Westwood was not able to reach the recipient. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice.

Tribal Government	Response Date and Summary
	No response to date.
Shakopee Mdewakanton Sioux Community	November 20, 2025 – Notification email, letter, and location map sent. November 20, 2025 – Shakopee Mdewakanton Sioux Community responded to the Project introduction letter stating they have no current concerns and to keep them informed. November 20, 2025 – Westwood responded that an update to the tribe will be provided if project details change. May 29, 2026 – Westwood provided the Phase I Archaeological Reconnaissance Survey. The Shakopee Mdewakanton Sioux Community responded thanking Westwood for the update and requesting to keep them informed.
Bois Forte Band of Chippewa	November 20, 2025 – Notification email, letter, and location map sent. November 20, 2025 – Bois Forte responded to the Project introduction letter requesting additional pollution or negative effects, if any, to the Mississippi River be mitigated. November 20, 2025 – Westwood responded that a stormwater management plan would be completed for the project and noted that stormwater management, potential water quality impacts, and proposed mitigation measures will be addressed in the Site Permit Application.
Fond du Lac Band of Lake Superior Chippewa Indians	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. The Fond du Lac Band of Lake Superior Chippewa Indians indicated they would review the pre-application notification email and respond. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice. No response or comments to date.
Grand Portage Band of Lake Superior Chippewa Indians	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. Westwood was not able to reach the recipient. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice.

Tribal Government	Response Date and Summary
	No response to date.
Leech Lake Band of Ojibwe	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 21, 2026 – The Leech Lake Band of Ojibwe responded to the Project introduction letter noting that they do not have any documented records of cultural resources within the Project Site. They requested to be notified if there are any human remains or artifacts identified during development. February 25.2026 – Westwood responded and noted the tribe would be notified if any artifacts or any human remains are discovered during construction.
Mille Lacs Band of Ojibwe Indians	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. The Mille Lacs Band of Ojibwe Indians indicated over the phone that they have no comments on the Project.
Red Lake Nation	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. Westwood was not able to reach the recipient. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice. No response to date.
White Earth Nation	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. January 27, 2026 – A phone call was made requesting confirmation of receipt and comments. Westwood was not able to reach the recipient. May 29, 2026 – A follow up email and a letter using certified mail was sent requesting comments or acknowledgement of receipt of the pre-application notice. The White Earth Nation THPO had changed since the initial

Tribal Government	Response Date and Summary
	outreach was completed. This outreach was sent to the new THPO for the White Earth Nation. No response to date.
Minnesota Indian Affairs Council Cultural Resources	November 20, 2025 – Notification email, letter, and location map sent. January 14, 2026 – A follow up email was sent requesting comments or acknowledgement of receipt of the pre-application notice. No response to date.

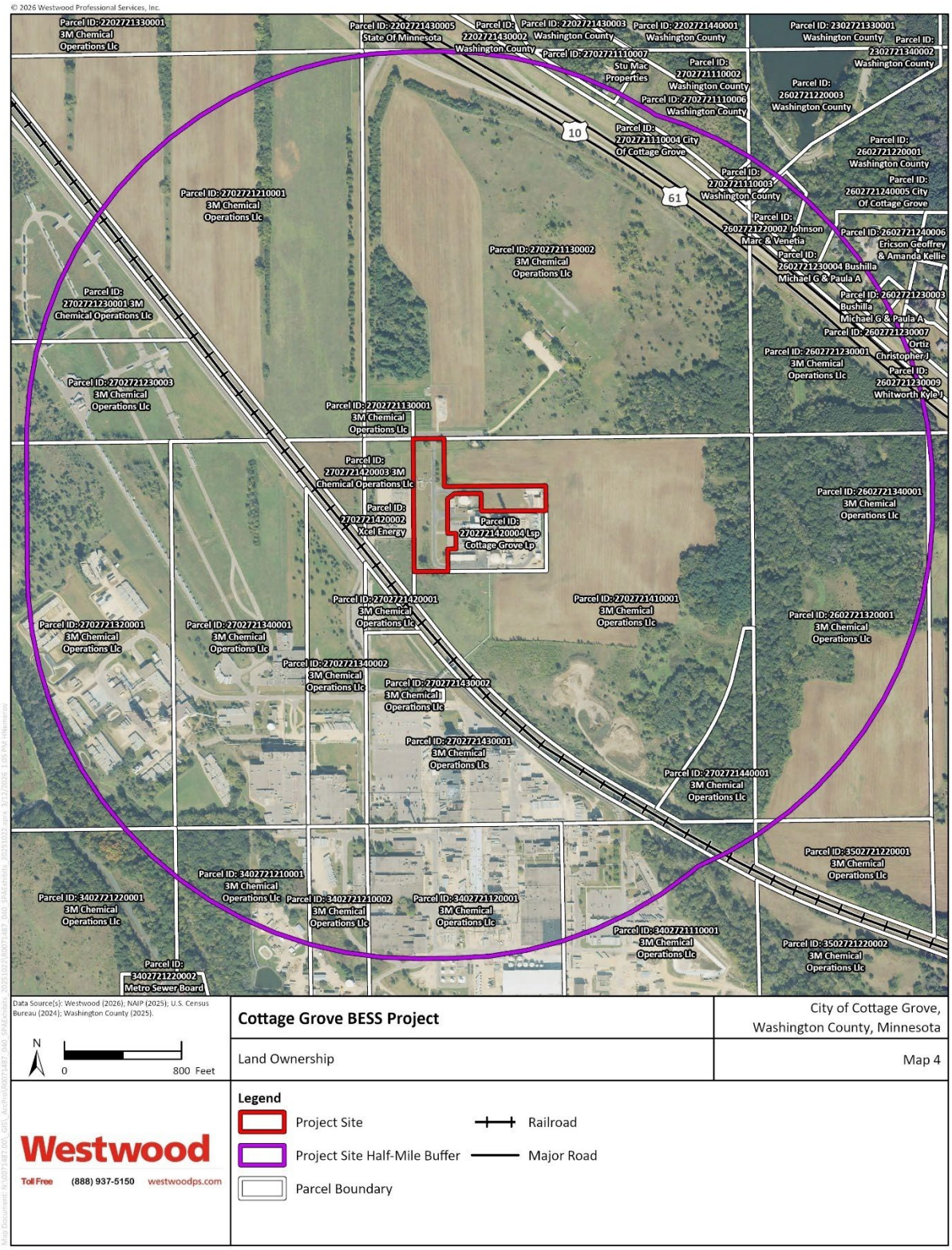
1.6.3 Landowner Coordination

The Project is located on one parcel under ownership of LSP Cottage Grove L.P. All lands with permanent infrastructure are subject to a lease with LSP Cottage Grove L.P. Applicant has obtained a signed consent and crossing agreement from 3M related to an access easement 3M holds within the Project Site. Applicant is pursuing a crossing agreement from the holding of an existing telephone line within the Project Site. No other land leases, easements, or other land use agreements are necessary to accommodate construction or operation of the Project. Adjacent properties consist primarily of commercial and industrial lands.

To facilitate the Commission's Application notice requirements (Minn. Stat. § 216I.05, subds. 3(b)(5) and 8(a)(3)), a list of each property owner whose property is within or adjacent to the proposed BESS Facility is included in Table 1.6-3 and shown on the Landownership Map (Map 4). There are two property owners and six parcels adjacent to the Project Site.

Table 1.6-3: Landowners Within and Adjacent to Project Site

Parcel ID	Primary Owner	Mailing Address
27.027.21.42.0004 (Project Site)	LSP Cottage Grove, L.P.	9525 105TH ST CT S Cottage Grove MN 55016
27.027.21.42.0002 (Chemolite Substation)	Xcel Energy	414 Nicollet Mall Minneapolis MN 55401
27.027.21.42.0003	3M Chemical Operations LLC	3M Center Saint Paul MN 55144
27.027.21.41.0001	3M Chemical Operations LLC	3M Center Saint Paul MN 55144
27.027.21.41.0001	3M Chemical Operations LLC	3M Center Saint Paul MN 55144
27.027.21.13.0002	3M Chemical Operations LLC	3M Center Saint Paul MN 55144
27.027.21.13.0001	3M Chemical Operations LLC	3M Center Saint Paul MN 55144



Map 4: Land Ownership

LSP Cottage Grove has been partners with the adjacent landowner 3M Chemical Operations LLC for decades providing steam to the neighboring industrial facility from the cogeneration plant. LSP CG Storage LLC, has worked with 3M the past few years discussing additional land opportunities for a BESS project. At this time, 3M has no interest in selling, leasing, or transacting its owned land in any form, but is aware of the BESS project development. Xcel Energy is the owner of the substation that the BESS project will ultimately be connecting into. Xcel Energy is also the off-taker of the BESS project through a MPUC approved PPA.[7]

The 3M crossing agreement mentioned above is not necessary for Applicant's access to the Project Site and is intended to address 3M's existing access easement giving 3M access through the Project Site from 105th Street Court South to 3M's land to the south of the Project Site. In 1995, prior to the construction of the existing cogeneration plant, 3M conveyed the site to LSP-Cottage Grove, L.P., and 3M reserved this access easement. The Applicant's understanding is that 3M has not historically used this access easement. Applicant and the fee owner of the Project Site, LSP-Cottage Grove, L.P., will enter into an Energy Storage Land Lease and Easement Agreement, under which Applicant will have rights of ingress to and egress from the Project Site. The Project Site has direct access to and from 105th Street Court South, a public road.

2.0 REGULATORY COMPLIANCE

2.1 Site Permit

Minn. Stat.§ 216I.05, subd. 1, provides that "a person is prohibited from constructing a large electric generating plant, a solar energy generating system, an ESS, or a large wind energy conversion system without a Site Permit issued by the Commission." An ESS is defined by Minn. Stat. § 216I.02, subd. 6, as "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." As an up to 80 MW BESS, a Site Permit is required for the Project.

2.1.1 Standard Review

As mentioned in Section 1.0, the Applicant can follow the Standard Review procedures. Under the Standard Review procedures, the Applicant must prepare and submit an EA with the Application. The EA must (1) contain information regarding the proposed project's human and environmental impacts, and (2) address mitigating measures for identified impacts. The EA is the only state environmental review document that must be prepared for the Project. The EA is incorporated into this Application as required by Minn. Stat. § 216I.07, subd. 3 in Section 6.0 (Environmental Assessment).

2.1.2 Pre-emption

Pursuant to Minn. Stat. § 216I.18, subd. 1, the Site Permit shall be the sole site approval required for the BESS Facility and the Site Permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose governments.

[7] *In the Matter of Northern States Power Company, doing business as Xcel Energy, Petition for Approval of a Purchased Power Agreement with Panamint for the Cottage Grove Battery Energy Storage System Project,* Docket Nos. E002/CN-23-212, E002/RP-24-67, Order (March 12, 2026).

2.2 Route Permit Not Required

Pursuant to Minn. Stat. § 216I.05, subd. 2, a person is prohibited from constructing a high-voltage transmission line without a route permit issued by the commission. By definition, a high-voltage transmission line means a conductor of electric energy and associated facilities that is (1) designed for and capable of operation at a nominal voltage of 100 kilovolts or more, and (2) is greater than 1,500 feet in length.[8] The Project's associated facilities will connect to the high side of the Project Main Power Transformer (MPT) within the Project Substation directly into the LSP Cottage Grove Cogeneration Facility substation bus bar and therefore does not require a Route Permit from the MPUC.

2.3 Certificate of Need Not Required

Pursuant to Minn. Stat. § 216B.243, subd. 8(9), an ESS is exempt from being required to obtain a certificate of need. Therefore, a certificate of need is not required for the Project.

2.4 Other Permits and Approvals

Other permits or approvals might be required for the Project. The Applicant will obtain all permits and approvals that are required for the Project concurrent with or following issuance of the Site Permit. Potential permits and approvals are included in Table 2.4-1.

Table 2.4-1: Potential Permits and Approvals

Agency	Permit / Approval	Applicability	Permit Status and Timing
Federal			
Environmental Protection Agency (EPA)	Oil Pollution Act Spill Prevention Control and Countermeasure (SPCC) Plan	A non-transportation facility where: the total aboveground storage capacity exceeds 1,320 gallons; or the underground oil storage capacity exceeds 42,000 gallons; and if, due to its location, the facility could reasonably expect to discharge oil into or upon navigable waters.	Will obtain prior to construction.
US Army Corps of Engineers (USACE), St. Paul District	Clean Water Act (CWA) Section 404 Permit	Dredging or filling jurisdictional Waters of the United States (wetlands/watercourses).	Will obtain prior to construction, if necessary, based on final design
State			
Minnesota Public Utilities Commission (MPUC)	Site Permit	Required for ESS 10 MW or greater.	Will obtain prior to construction through this Site Permit Application

[8] Minn. Stat. § 216I.02, subd. 8.

Agency	Permit / Approval	Applicability	Permit Status and Timing
Minnesota Pollution Control Agency (MPCA)	National Pollutant Discharge Elimination System (NPDES) General Permit Coverage	NPDES/State Disposal System Construction Stormwater General Permit No. MN R100001 for stormwater discharges associated with construction activity that will result in land disturbance equal to or greater than one acre.	Will obtain prior to construction
MN State Historic Preservation Office (SHPO)	Cultural and Historic Resources Review; State and National Register of Historic Sites Review	Required for projects in need of state permits or that will affect state register properties	Obtained in conjunction with Site Permit Application
Minnesota Department of Labor and Industry (MDLI)	Electrical inspection of installed equipment	Compliance with state electrical codes.	Inspection to occur after installation of electrical equipment during construction and prior to operation.
Minnesota Department of Natural Resources (DNR)	Consultation and Review of State Threatened and Endangered Species	Required when there are potential effects on state-listed threatened and endangered species	Obtained in conjunction with Site Permit Application
Minnesota Department of Transportation (MnDOT)	Oversize/ Overweight Permit	Vehicles delivering equipment, materials and supplies that exceed applicable MnDOT height/length limits and weight limits	Will obtain prior to construction, if necessary, based on final design
MN Board of Water & Soil Resources (BWSR)	Wetland Conservation Act (WCA) Approval	Draining, filling in, or excavating wetlands unless such activity is exempt or wetlands are replaced by restoring or creating wetlands of at least public value	Will obtain prior to construction, if necessary, based on final design
Local			
Washington County	Transportation Permit	Vehicles delivering equipment, materials and supplies that exceed applicable height/length and weight limits	Will obtain prior to construction, if necessary, based on final design
	ROW Permit	Required for utility installation, grading or obstruction of a ROW within Washington County	Will obtain prior to construction, if necessary, based on final design
City of Cottage Grove	Sewer/Water Permit	Required for construction of new water and sewer systems or tie into existing water and sewer systems within the City of Cottage Grove	Will obtain prior to construction, if necessary, based on final design

Agency	Permit / Approval	Applicability	Permit Status and Timing
South Washington Watershed District	Water/Stormwater Management Permit	Projects disturbing more than one acre, impacting wetlands, or developing in a floodplain within the watershed district's jurisdiction require a permit	Will obtain prior to construction, if necessary, based on final design

2.5 Prohibited and Exclusion Sites

Minn. R. 7850.4400, subp. 1, prohibits the placement of large electric power generating plants 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. None of these prohibited sites are located within or near the Project Area as discussed in Section 6.0 (Environmental Assessment).

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 or near the Project Area as discussed in Section 6.0 (Environmental Assessment).

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). There is no mapped Prime Farmland within the Project Site.

3.0 FACILITY DESCRIPTION

The Project is a BESS and associated facilities. As a BESS, the Project does not produce electricity but serves as an adjacent facility to the existing electrical grid. BESS contributes to balancing energy demand and optimizing grid conditions by taking in surplus electrical energy from the grid during times of excess production and releasing this energy during times of peak demand. This process optimizes grid stability through load leveling and frequency stabilization.

The Project will also have the capability to provide critical ancillary services to the local grid, including voltage regulation (helping the local grid maintain its design voltage of 115 kV) and frequency regulation (helping to maintain a steady 60 hertz). The final design is expected to occupy approximately 3.3 acres of the Project Site (Preliminary Development Area) and the remaining 3.5 acres may remain in the current condition or be planted with perennial vegetation.

The Applicant plans to construct the Project on a schedule with COD by Q2 2028. To allow for optimization in the final design, equipment selection, and unanticipated discoveries through the permitting process, Project impacts described in this Application are representative of the largest potential Preliminary Development Area and are therefore greater than what is expected to occur from the actual construction

and operation of the Project. The Preliminary Site Plan is shown on Map 3.

The Project Site is 6.8 acres of industrial land together with an existing access road owned by LSP Cottage Grove Facility. The Project Site refers to all the land under lease and a Shared Facilities Agreement with LSP Cottage Grove L.P. The Shared Facilities Agreement between the Applicant and LSP Cottage Grove L.P. allows for the Applicant's use of the existing driveway to access the Project. After obtaining a Certificate of Need[9] from the Commission and a conditional use permit[10] from the City of Cottage Grove, the LSP Cottage Grove Facility began operations in 1997. It is a 265 MW dual-fuel cogeneration power station that reliably provides essential steam service for 3M's Cottage Grove plant. 3M's Chemolite plant employs over 700 industrial workers.[11] In July 2025, LSP Cottage Grove L.P., the owner of the cogeneration facility, entered into a 15-year tolling agreement with Basin Electric Power Cooperative for the offtake of energy from the facility and that agreement begins in December 2027.

Based on the Preliminary Site Plan, the Project will occupy 3.3 acres of the Project Site. Development within the Preliminary Development Area will include battery storage enclosures (or containers), medium voltage skids, a substation, underground electrical collection lines, a gen-tie line, temporary areas for storage and parking, one new gravel access road, fencing, an infiltration trench and infiltration basin, a laydown yard, and other minor equipment and subcomponents that are typical of a BESS Facility. See Map 3 in Appendix B and the preliminary site plan provided in Appendix F.

O&M will be housed within the existing LSP Cottage Grove Cogeneration Facility.

3.1 Facility Location and Land Control

The Project is generally located in the southeastern portion of the City of Cottage Grove, north of the Mississippi River. The Project is located within the existing industrial area of the LSP-Cottage Grove Cogeneration Facility south of 105th Street South and east of Innovation Drive. The Project is in Township 107N, Range 15W, Section 35 in Washington County, Minnesota. Per MPUC Guidance, the Project Location map includes county and municipal boundaries, cities, townships, waterbodies, and all major roads within a 10-mile buffer as shown on Map 1 in Appendix B.

The Applicant believes that the selected Project location in Washington County is feasible and prudent for BESS development based upon the proximity to existing electric transmission infrastructure, its location within an existing thermal generating plant industrial area, minimal impact to natural resources, and consistency with other surrounding industrial land uses.

The Project has been sited on land under ownership of LSP-Cottage Grove, L.P. The primary access corridor is on land owned by LSP-Cottage Grove, L.P., the owner of the LSP Cottage Grove Cogeneration Facility. The Applicant has entered into a Shared Facilities Agreement and will enter into a lease for the

[9] In the Matter of the Application by LSP-Cottage Grove, L.P., for a Certificate of Need for a Large Generating Facility, Docket No. IP-1/CN-94-004 (Order Granting Certificate of Need dated October 19, 1994).

[10] A Resolution Approving the Conditional Use Permit to Construct a Primarily Gas Fired Power Plant/Cogeneration Power Plant and Authorize a Height Variance of 213 Feet for a Heat Stack for LS Power Corporation, Generally Located 2500 Feet South of T.H. 61/10 and Approximately 300 Feet East of Chemolite Road, Resolution No. 94-244 (Passed Unanimously November 16, 1994).

[11] 3M. 3M Plant Locations. https://www.3m.com/3M/en_US/plant-locations-us/cottagegrove/. Accessed May 2026.

Project with LSP-Cottage Grove L.P., the entity which owns the LSP Cottage Grove Cogeneration Facility. All necessary land rights have been secured for construction and operation of the proposed Project. Land used for the Project will be returned to the underlying landowner upon completion of the operational life of the Project.

3.2 Size and Capacity

The Project is proposed within a 6.8-acre Project Site together with either an existing access road owned by LSP Cottage Grove Facility or a new access road within an easement corridor parallel to the existing LSP-Cottage Grove Facility access road. The Applicant estimates that approximately 3.3 acres of the Project Site are necessary to accommodate the final design and engineering of the proposed Project (i.e., the Preliminary Development Area), but the full 6.8 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 existing conditions following the completion of construction.

The Project will utilize Lithium Iron Phosphate (LFP) or similar battery technology to provide up to 80 megawatts alternating current (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 8% to 10% losses) and would allow for a maximum of 80 MWac of energy storage and transmission onto the grid. An interconnection request for 80 MW has been submitted to Midcontinent Independent System Operator (MISO), and all assumptions about development and construction activities are contingent on signing a Generator Interconnection Agreement (GIA) prior to construction of the Project. Accordingly, the Applicant is requesting a Site Permit for the Project with sufficient capacity to deliver up to 80 MW as measured at the POI. The current layout and proposed equipment are preliminary and subject to change as the design advances. See Section 3.3.4.3 for additional information on the GIA and MISO.

3.3 Facility Components

The main components of the Project currently include 80 BESS enclosures, 20 medium voltage transformer skids (MVT skids) consisting of Energy Management System hardware and transformers, a Project Substation, security fencing, and internal access roads. All Project primary components are bi-directional and utilized based on directional flow of energy to and from the BESS enclosures. The specific equipment or technology to be used has not been established at the time of filing of this Application and will be dependent upon market conditions and equipment availability at the time of construction. The assumptions in this Application are largely based on Sungrow battery technology and standard industry battery technology to reflect a likely development scenario. The preliminary design of the facility accommodates a variety of technologies and has adequate room for placement of necessary equipment and supporting elements, such as equipment storage, parking, and stormwater management, but the design is not final and will be further refined prior to development.

The Applicant intends to use an approximate 0.2 acre construction laydown yard as shown in Map 3. The Applicant will return the laydown yard to prior land use conditions or perennial vegetation following construction of the Project. Major components of the facility are described in further detail in the following sections.

3.3.1 Detailed Facility Components and Design

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 below, Project facilities and equipment are expected to include:

- LFP battery cells permanently enclosed in modules which are then installed in racking within a custom storage equipment enclosed in custom designed enclosures;
- Integrated battery management systems and telemetry devices;
- MVT skids, inverters integrated into the enclosures and standalone transformers;
- Electrical and communications wiring;
- Electrical feeder lines;
- Security fencing and gates;
- Internal access roads;
- Stormwater management basins and infiltration basins;
- Heat, smoke, and gas detection and mitigation systems;
- Supervisory Control and Data Acquisition (SCADA) system;
- Project Substation, including power transformer(s), switching, and overcurrent protection;
- Metering equipment; and
- Ancillary equipment, as necessary.

Project facilities and related components are shown on Map 3.

The design assumptions accommodate a variety of battery technologies to allow flexibility during equipment selection at the time of construction. The preliminary design is largely based on Sungrow battery technology, however, 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. Therefore, the Project has been designed to accommodate a variety of technologies and has adequate room for placement of necessary equipment and supporting elements.

3.3.2 Battery Cells and Enclosures

A BESS 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. A BESS can help maximize the function of the regional network by dispatching stored power during times when less energy is being produced.

Technology related to battery storage is advancing at a rapid pace. Similar to other infrastructure components, the options available for the BESS when the Applicant begins procuring infrastructure could be significantly more advanced or offered in a wider selection than those currently available. Therefore, the Applicant will analyze current market offerings during final engineering to select the specific battery system

model but is currently designing the Project to accommodate a variety of LFP battery technologies. For the purposes of this Application, Sungrow LFP battery technology was used to model the Project. The actual footprint of the BESS enclosures may vary slightly depending on options available during final engineering.

3.3.2.1 Battery Cells

The BESS industry is currently deploying two main types of lithium-ion battery cells: nickel manganese cobalt oxide (NMC) and LFP. The Applicant intends to use LFP due partially to its improved safety profile when compared to NMC. LFP batteries are more stable than NMC and have a lower risk of thermal runaway. Thermal runaway occurs when a battery cell's internal temperature heats to a temperature above the design temperature to maintain a controlled reaction resulting in a cascading chemical reaction which produces additional heat. This typically leads to breakdown of internal separators within the battery cell which results in additional reactions. Due to the high temperatures involved, this can also result in fire in nearby combustible components.[12] In the unlikely event of a battery cell thermal runaway event, due to the use of less reactive substances in LFP cells, the likelihood of both thermal runaway occurring and spreading is reduced in comparison to other lithium-ion chemistries including NMC. Potential hazards and safety considerations are discussed in more detail in Section 3.3.5 below.

Over the life of the Project, the batteries will lose some of their capacity. Under current MISO market rules, a BESS is accredited capacity based in part on its ability to provide the energy equivalent of its claimed capacity for a minimum of at least four continuous hours each day. To maintain the facility's rated capacity, the BESS will undergo augmentation either through the addition of battery modules within the existing enclosures or the addition of supplemental battery enclosures. The augmentation schedule to maintain overall Project functionality will be determined during the design process after final equipment selection and will be based on the projected degradation of the batteries. The Applicant has designed the site to accommodate future augmentation units within the fenced area with up to 15 additional units planned to be installed at years 5, 9, and 13. Specific installation timing will vary based on capacity monitoring during operations. The Applicant has included the planned augmentation units in the design of the Project as displayed on Map 3. Accordingly, the initial construction of the BESS Facility will not include all battery enclosures, with augmentation units added during the life of the Project. The Applicant respectfully requests the Site Permit expressly allow the addition of augmentation units, as depicted in the final site plan, without a need for a Site Permit Amendment or minor alteration approval from the Commission subject to the Applicant complying with all the Site Permit conditions and notifications.

3.3.2.2 Battery Enclosures

The preliminary design for the BESS incorporates a modular layout of enclosures based on the Sungrow PowerTitan 2.0. The BESS enclosures are currently planned on approximately 2.3 acres within two areas within the Project Site. Based on the preliminary site plan, 80 BESS enclosures will initially be installed. The Applicant may add up to 14 additional BESS enclosures in the future as augmentation. Each BESS enclosure will be comprised of battery cells, integrated with battery management systems into battery modules placed in racks, and installed within a weather-proof enclosure (Figure 2). These enclosures do

[12] Ovrom, Andrew. 2023. Comparing NMC and LFP Lithium-Ion Batteries for C&I Applications. Mayfield Renewables. https://www.mayfield.energy/technical-articles/comparing-nmc-and-lfp-lithium-ion-batteries-for-ci-applications/#:~:text=Nickel%20Manganese%20Cobalt%20(NMC)%20and%20Lithium%20Iron%20Phosphate%20(LFP,long%2Dterm%20reliability%20are%20paramount. Accessed February 2026.

not allow internal ingress for safety reasons as described in Section 3.3.5 below.

Figure 2: Sungrow PowerTitan 2.0 (ST5015UX-4H-US) BESS Enclosure

A BESS 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. A BESS can help maximize the function of the regional network by dispatching stored power during times when less energy is being produced.

Each BESS enclosure will be connected to a medium voltage transformer skid, as described in Section 3.3.3, via 34.5 kV underground cables.

Visually, the BESS enclosures would not be out of character with the existing LSP Cottage Grove Cogeneration Facility. The BESS enclosures are neutral in color, relatively low in height (approximately 10 feet, including foundations), approximately 20 feet long and 8 feet wide. See Section 6.4.1 (Aesthetics) for additional information on the visual impact of the Project.

3.3.3 Inverters and Transformers

Each BESS enclosure includes a row of power conversion system (PCS) units at the bottom as shown on Figure 2. The PCS units provide the electrical connection between the grid and the batteries. They transform direct current (DC) from the batteries to AC by discharging, while they turn AC from the grid to DC by charging. An example PCS unit is provided in Figure 3.

Figure 3: Example PCS

Based on the preliminary site plan, 20 MVT skids will initially be installed between the BESS enclosures. Each skid includes a medium voltage transformer to transfer the energy to and from the batteries and a Smart Control Cabinet to provide battery charge/discharge monitoring. Up to five additional MVT skids may be added to augment additional BESS enclosures in the future. The Sungrow MVT Skid is provided in Figure 4.

Figure 4: Sungrow MVS5140-LS-US MVT Skid

Each BESS enclosure will be connected to the MVT skids via 34.5 kV underground cables.

3.3.4 Project Substation and Interconnection

3.3.4.1 Project Substation

The Project Substation is proposed in the southern part of the Project Site (Map 3). Access to the Project Substation will be from the existing paved road. The Project Substation will be an expansion of the existing Cottage Grove Substation, which is located within the LSP Cottage Grove Cogeneration Facility. The Project Substation is estimated to occupy approximately 0.2 acre of land within the Project Site. 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, a gen-tie line connecting to the nearby existing transmission line structures, lightning protection, and control equipment according to the specifications of the GIA with MISO and the Applicant. See Section 3.3.4.3 for additional information on the GIA and MISO.

3.3.4.2 Interconnection

The Project is designed to connect to the adjoining LSP Cottage Grove Cogeneration Facility Substation and transfer grid-based electricity out of the Project Substation and into the Xcel Energy transmission system via the Chemolite 115 kV substation through a series of Project facilities, including: transformers, inverters, battery storage modules within equipment enclosures, and the LSP Cottage Grove Cogeneration Facility bus bar. All Project electrical facilities are bi-directional. Energy flow between the Project and the LSP Cottage Grove Cogeneration Facility Substation will be based on real-time regional energy demand and grid conditions.

The Project will connect to the grid via LSP Cottage Grove L.P.'s existing LSP Cottage Grove Cogeneration Facility Substation. Energy from the grid will be stepped down from the 115 kV interconnection voltage at the bi-directional MPT located at the Project substation, then delivered through underground 34.5 kV feeder lines to the medium-voltage transformers where it will be stepped down to 0.69 kV and finally to the BESS system integrated 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, the medium-voltage transformers will step the voltage up to 34.5kV and the energy 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 MPT located at the Project Substation and transmitted to the Xcel Energy transmission system via the LSP Cottage Grove Cogeneration Facility Substation.

The transfer of electrical energy to and from the grid and the batteries includes several steps. The Project will be connected to the Xcel Energy transmission system via the existing LSP Cottage Grove Cogeneration Facility Substation. The Project Substation has switches, protection devices, and a high-voltage, bi-directional MPT 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 medium-voltage transformers and then the integrated PCS, depending on final equipment selection, unless the battery technology chosen includes string inverters within the BESS enclosures and standalone transformers. The 34.5 kV feeder lines connect the PCS to convert the power from medium-voltage AC to DC electricity. The energy is then stored in battery modules on racking systems within the BESS enclosures.

As an example, when power is collected from the grid and stored in the Project batteries, electricity will flow from the Xcel Energy transmission system through the LSP Cottage Grove Cogeneration Facility Substation, to the Project Substation where the power is stepped down from 115 kV to 34.5 kV, then to the medium voltage transformers where the power is stepped down again from 34.5 kV to 0.69 kV, and then to the PCS within the BESS facilities. The stepped-down power is then transformed from AC to DC energy via the integrated 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 BESS enclosure and is changed from DC to AC energy via the same integrated 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 to 115 kV MPT at the Project Substation. The MPT steps up the energy to 115 kV to be delivered to the LSP Cottage Grove Cogeneration Facility substation. At that point, energy flows on the Xcel Energy transmission system to electricity users' loads.

All Project electrical facilities are bi-directional. The typical energy flow between the BESS Facility and the Chemolite 115 kV Substation will depend on real-time energy demand and grid conditions.

3.3.4.3 MISO Approval

The Applicant filed a GIA application with MISO for 80 MW. MISO is the electric grid operator for the central United States that ensures power flows reliably and affordably across 15 states and the Canadian province of Manitoba. Additionally, MISO facilitates the buying and selling of electricity in its region and partners with its stakeholders to plan the grid. Approval from MISO through a GIA is required to

interconnect the Project to the electrical transmission system. The Applicant entered the interconnection request into the MISO Definitive Planning Phase study process in 2022. The Applicant expects to execute a GIA in Q1 2027.

3.3.5 Communication and Safety Systems

From initial Project site layout and equipment specifications to system integration and commissioning, the Project has been developed in accordance with industry best practices, including standards established by the National Fire Protection Association (NFPA), Institute of Electrical and Electronics Engineers (IEEE), and Underwriters Laboratories (UL). These guidelines help mitigate operational risks, prevent hazardous incidents, and support long-term system stability. Through careful planning and adherence to these technical and safety frameworks, the Project is engineered to meet both functional and regulatory requirements.

3.3.5.1 Construction and Operational Safety

The safe design and operation of the BESS Facility 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 BESS 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.

Measures to minimize the likelihood and potential of these events include:

- Physical spacing of BESS enclosures 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 BESS enclosure selection discussed in Section 3.3.2, the Applicant has incorporated safety

precautions into the preliminary design protocols of the proposed Project. The LFP batteries modeled for the Project will be stored in weather-proof units, similar in size to shipping containers (BESS enclosure). Each enclosure includes a fully integrated system of air or liquid-cooled heating, ventilation, and air conditioning (HVAC) for temperature control, sensors, and controls for remote monitoring, and built-in fire, smoke, sprinklers, 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.

3.3.5.2 Testing and Certification

All BESS equipment associated with the Project will be designed, constructed, and tested in compliance with industry-recognized standards. Current certifications include UL standards UL 1973, UL 9540, and the IEEE Standard 1547. The BESS equipment will also meet or exceed the relevant safety standards applicable at the time of final design, including 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 BESS 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 BESS units 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 (OSHA) 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 Applicant 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.

3.3.5.3 Monitoring and Reporting Systems

The BESS Facility will be equipped with an advanced monitoring system that tracks multiple parameters across various levels of the system. Each BESS enclosure 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 batteries will be housed 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 Applicant is committed to providing training resources for local responders, as well as the collaborative development of an emergency response plan (ERP) specific to this Project. The Applicant will coordinate development of a site-specific ERP with local responders prior to energization of the Project. The Project's ERP will require quarterly safety drills for the Project team and will make annual safety training available to local first responders. The ERP for this Project will cover a wide breadth of possible incidents at the site and include emergency procedures to be followed in case of fire, medical emergencies, and other potential situations.

The ERP will also provide a discussion of the potential for emergencies at the Project to interact with the Modular Energy Controller and other nearby utility services, such as the LSP Cottage Grove Cogeneration Facility. In the event of an emergency, there is a significant potential for interaction between the BESS Facility, the LSP Cottage Grove Cogeneration Facility, 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 the LSP Cottage Grove Cogeneration Facility and nearby utility facility operators. Cross training exercises will be conducted to confirm that all personnel, both from the Project, LSP Cottage Grove Cogeneration Facility, 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.

3.3.5.4 Performance Monitoring (Supervisory Control and Data Acquisition System)

The Applicant will implement a comprehensive performance monitoring program for the Project utilizing real-time, continuous data acquisition through the SCADA system (energy stored, alarms, faults, etc.) and energy metering infrastructure. The SCADA system will monitor key operational parameters, including energy storage performance, system availability, meteorological conditions, and communications functionality. The BESS enclosures 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. The Applicant anticipates housing the SCADA system within a new building within the proposed Project Substation pad.

3.3.6 Security Fencing

The entire LSP Cottage Grove Cogeneration Facility is fenced. In addition, permanent security fencing will be installed along the perimeter of the BESS Facility (Appendix F) to comply with applicable electrical codes, including the National Electrical Code, in NFPA 70.[13] Fencing will consist of a six-foot-tall chain link fence, with one to two feet of barbed wire and will be installed only at the locations within the existing facility that are not already fenced. High voltage warning signs and lockable gates will also be installed on the fencing. Access to Project facilities will be from locked gates off the access roads.

3.3.7 Access Roads

Access to the Project will be from 105th Street Court south and the existing paved road entrance LSP Cottage Grove Cogeneration Facility. The road entrance extends throughout the parcel providing access to different areas of the Cogeneration Facility. One 20-foot-wide paved road would be constructed along the northeastern edge of the Project Site (Map 3). The new road would be approximately 530 feet long and connect to the existing paved roads. The final length of the access road will depend on the equipment selected and final engineering. This new road would provide the main access to the eastern BESS enclosures. See Figure 5 for a typical BESS access road profile. A locked gate at the road entrance prevents unauthorized access.

The western BESS enclosures would be accessed via the existing paved road that runs north south along the western portion of the parcel.

The surface space between BESS enclosures will be completely covered by gravel. This will allow for drivable access in between the BESS enclosures around the perimeters and between rows. These internal spacings/drive lanes will be approximately 11 feet wide during construction and operation between the BESS enclosures and the MVT skids, and approximately 11.5 feet wide between the BESS blocks (group of two enclosures) and MVT skids.

The existing road entrance apron is likely sufficiently sized to accommodate equipment deliveries during construction and to allow safe turning radii for trucks. If temporary widening of the access road is necessary all required permits and approvals will be applied for prior to impacts. At its widest, the apron is approximately 80 feet wide and narrows to about 20 feet wide within the existing facility.

It is unlikely that upgrades or other modifications to the public roads will be required for construction or operation of the Project; however, the Applicant will engage with city and county staff to clearly establish an understanding of their required road standards. Should conditions along chosen delivery routes require upgrades or changes, those could include, but are not limited to, road improvements (lane widths, road profile depths, intersection radii), additional aggregate, and driveway changes. The Applicant will obtain relevant permits from road authorities to accommodate construction related activities.

[13] NFPA 70, 2023. National Electrical Code. Quincy: National Fire Protection Association.

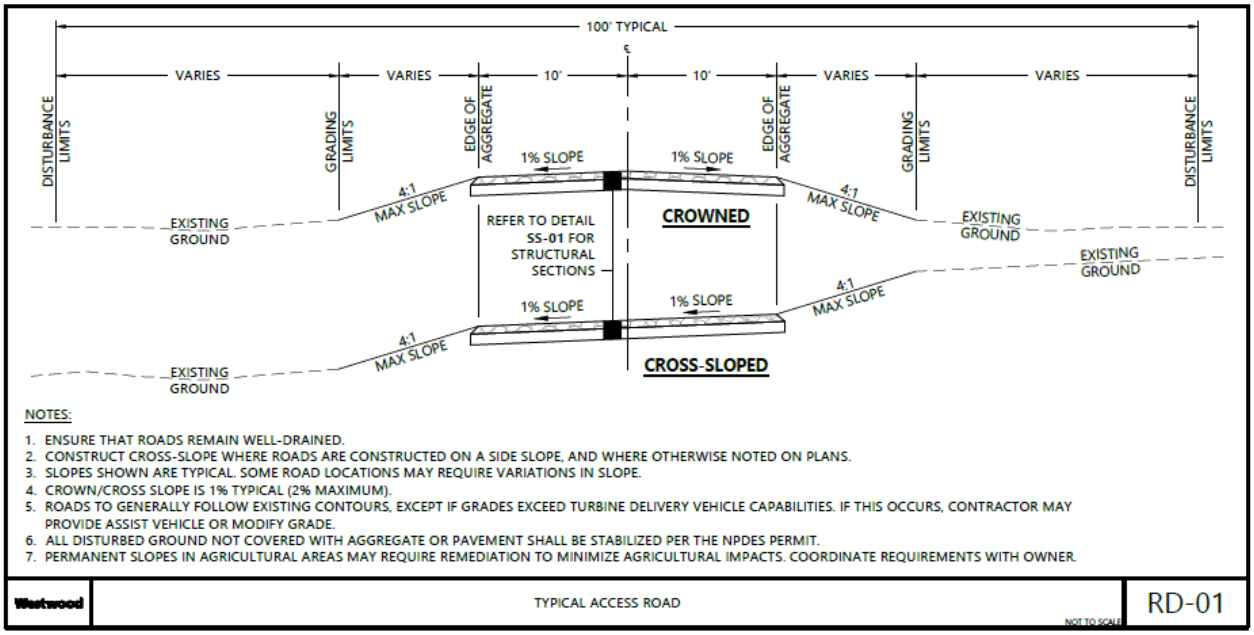


Figure 5: Typical BESS Access Road Profile

3.3.8 Laydown Yard

During construction of the Project, one temporary approximately 0.2 acre laydown yard will be located in the northern portion of the Project Site (Map 3). Upon completion of Project construction, the laydown yard will be regraded and seeded with a perennial mixture for slope stabilization.

3.3.9 Stormwater Basins

One infiltration basin and one infiltration trench are included in the design of the Project. The infiltration basin is composed of three stormwater ponds connected by equalization pipes, with one downstream outlet to the south. The infiltration trench is proposed along the northern boundary of the Project Site to infiltrate runoff from the eastern BESS pad (Map 3 and Appendix F). During large storm events overflows from this infiltration trench will flow into the existing swale and then into the infiltration basin.

The stormwater management system will be sized appropriately and will meet state and city requirements for reducing runoff rates and providing the required treatment. Moderate grading and the use of swales and diversion berms may also be used to prevent flooding of infrastructure and route water to the proposed basins. Table 3.3-1 summarizes the stormwater management requirements.

Table 3.3-1: Stormwater Management Requirements

Agency	Source	Water Quantity Requirement	Water Quality Requirement	Other
State of Minnesota	Minnesota Pollution Control Agency Stormwater Manual	Post Construction Runoff Rates ≤ Pre Construction Runoff Rates (2-, 10-, 100-year 24-hour events)	1.0" of runoff over contributing area	Infiltration within 48 hours
South Washington Watershed District	South Washington Watershed District Rules	Post Construction Runoff Rates ≤ Pre Construction Runoff Rates (2-, 10-, 100-year 24-hour events)	Annual total phosphorus loading rates must be ≤ 0.22 lb/ac. Post construction TSS discharge rates ≤ Preconstruction TSS discharge rates	None
City of Cottage Grove	Surface Water Management Plan	Infiltration basin must discharge at 0.11 cfs/acre for the onsite area to the basin	1.0” of runoff over new and reconstructed impervious area	Time of Concentration must be ≥ than 8 minutes

See Appendix G for the Preliminary Stormwater Management Plan and Appendix F (Preliminary Site Plan) for typical stormwater construction details.

3.4 Power Purchase Agreement

On December 5, 2025, Xcel Energy, filed a petition requesting approval of a Power Purchase Agreement (PPA) with LSP CG Storage LLC for the Cottage Grove BESS Project. The MPUC approved the PPA in a written order issued March 12, 2026.[14] The Project is intended to help replace a portion of a project withdrawn from Xcel Energy’s competitive resource acquisition process.[15] The MPUC adopted the Minnesota Department of Commerce’s recommendation to approve the PPA and grant Xcel Energy cost recovery.[16]

3.5 Construction

3.5.1 Construction Activities

A variety of activities must be completed to carry the Project through construction and into operation. Below is a preliminary list of activities necessary to develop the Project. Pre-construction activities will be completed between submittal of this Application and the start of construction. Pre-construction, construction, and post-construction activities for the Project will utilize best current practices which

[14] In the Matter of Northern States Power Company, doing business as Xcel Energy, Petition for Approval of a Purchased Power Agreement with Panamint for the Cottage Grove Battery Energy Storage System Project, Docket Nos. E002/CN-23-212, E002/RP-24-67, Order (March 12, 2026).

[15] In the Matter of Xcel Energy’s Competitive Resource Acquisition Process for up to 800 Megawatts of Firm Dispatchable Generation, Docket No. E002/CN-23-212, Order Approving Settlement Agreement With Modifications (April 21, 2025).

[16] In the Matter of Northern States Power Company, doing business as Xcel Energy, Petition for Approval of a Purchased Power Agreement with Panamint for the Cottage Grove Battery Energy Storage System Project, Docket Nos. E002/CN-23-212, E002/RP-24-67, Order (March 12, 2026).

typically include:

- Pre-construction
  - Geotechnical investigation;
  - Underground utility identification and location;
  - Initiate soil/vegetation stabilization in areas with no disturbance;
  - Design Project Substation;
  - Design BESS Facility;
  - Design access roads and electrical systems; and
  - Procure necessary Project components (e.g. BESS and inverters/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 and set up temporary job site trailers;
  - Construct stormwater basins;
  - Civil construction of access roads;
  - Construct fencing;
  - Install below-ground electrical systems including conduit, electrical feeder cables, other electrical cables, and communications cabling;
  - Install electrical enclosure/inverter and padmount transformers;
  - Install BESS enclosures and batteries;
  - Construct Project Substation; and
- 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 ERP with local first responders;
  - Energize, test, and commission the facility; and
  - Begin commercial operation.

3.5.2 Construction and Construction Management

Construction will begin after the necessary permits are obtained and the electrical interconnection process is finalized with MISO. Project construction will begin with workforce mobilization and the initial site preparation work, including establishment of staging/laydown area, grading, and vegetation removal. Preliminary engineering analysis indicates that approximately 147,000 square feet of the Preliminary

Development Area will require grading. Approximately 5,800 cubic yards of cut and 2,200 cubic yards of fill is estimated for the Project. Final cut and fill volume estimates for the access roads, stormwater management features, BESS pad, and other Project facilities will be established with the final site design.

In this first phase of construction, general site improvements will be made, such as access road improvements and preparation of the laydown yard. A temporary laydown yard will be located in the northern portion of the Project Site. The laydown yard will be used for storage of construction materials and shipped equipment containers, receiving construction deliveries, and temporary parking for Project-related vehicles. Temporary construction offices will also be located on-site during construction.

The BESS components and associated facilities (battery enclosures, MVT skids and electrical systems) will be installed next in conjunction with internal drive lanes. These drive lanes are differentiated from other on-site access roads in that there will not be a separate road within the fenced area. That area will be graveled in its entirety with no specifically designed road profile or area, so vehicles will move in lanes between the BESS enclosures. Construction work for the proposed BESS will begin by scraping and segregating topsoil and placing it in a designated location. Installation of the transmission line pole will require the use of a pile driver or an auger/digger. Below-ground medium voltage (34.5 kV) cables from this equipment will run from the MVT skids to the Project Substation. Crushed rock will be placed between and among installed BESS equipment, and adequate lighting will be installed around the BESS pads for worker safety during construction and operation.

3.5.3 Substation Construction

Construction of the Project Substation will take place simultaneously with the BESS. Grading for the Project Substation, foundations, and future internal drive lanes will have already been completed with the grading that will be completed for other areas of the Project. The grounding grid and underground conduit will be installed in conjunction with the foundations for the transformer, control house(s), and high voltage structures. The Project Substation equipment will then be delivered to the site and installed on the prepared foundations. Secondary containment areas for the transformer will be constructed as required by the Project-specific SPCC Plan, and final grading will occur around the Project Substation. The last construction activities associated with the Project Substation include stringing the electrical wires, installing the perimeter fence, and placing coarse, clear, crushed rock throughout the interior of the fenced area and extending to approximately five feet outside the fence.

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 six-foot-tall chain-link fence topped with one to two feet of barbed wire in accordance with applicable electrical code requirements for security and safety purposes. 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.

3.5.4 Construction Workers

On-site construction personnel will consist of laborers, tradespersons, supervisory personnel, construction

management personnel, and administrative and support staff. The Applicant will contract with one or more Engineering, Procurement, and Construction (EPC) contractors to construct the Project. The Applicant will require the selected EPC contractor(s) to work with subcontractors and other vendors to implement and maximize local hiring and local economic benefits for the Project, while ensuring the Project is safely built on time and on budget. If multiple contractors are hired to work on separate portions of the Project (e.g. different contractors for the BESS Facility and Project Substation), coordination between the contractors will be required to maintain compliance with all applicable permitting requirements.

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 150 jobs during the peak construction and installation phases, and one to three full-time jobs during the operations phase. See Section 6.4.11.3 for additional information regarding the construction workforce for the Project.

3.5.5 Construction Equipment

The Applicant estimates that there will be approximately five to ten semi-trucks used daily for equipment delivery during construction. This volume of traffic will be limited to several weeks during delivery of battery module enclosures 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 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 Project Site.

3.5.6 Commissioning

Equipment inspections will be conducted prior to commercial operations in accordance with applicable Site Permit conditions and associated permit approvals. Inspections are anticipated to include Minnesota Department of Labor and Industry electrical inspection, MISO interconnection inspection, and emergency responder inspection. Each component of the BESS, 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.

3.6 Restoration

As portions of the Project near completion, the temporary 0.2 acre laydown yard and other temporary disturbance areas will be restored. The Project will be graded to natural contours, where possible, and topsoil stockpiled during construction will be respread over these areas. If areas outside of the Preliminary Development Area or temporary disturbance areas inside the Preliminary Development Area are disturbed, these areas will be de-compacted and reseeded and re-vegetated with specific seed mixes in accordance with best management practices (BMPs) identified in the Vegetation Management Plan (VMP; Appendix H) and the Stormwater Pollution Prevention Plan (SWPPP) that will be developed at the time of construction. These seed mixes are designed to be used in conjunction with the vegetation management practices of mowing and selective herbicide application. All areas undergoing restoration will be stabilized with erosion control measures such as silt fences, hydro-mulch, and sediment control logs until vegetation is established. Vegetation is expected to be fully established during the sixth growing season (year five) after perennial seed mix is planted, although native vegetation usually takes two to three years for plants to reach full maturity in years with normal rainfall to establish full vegetation.

The VMP provides a guide to site preparation, installation of prescribed seed mixes, management of invasive species and noxious weeds, and control of erosion/sedimentation. The required restoration management is designed to continue for five years, but after years one and two it should see a reduction in need of maintenance as the vegetation establishes. The Applicant will use an adaptive management approach for vegetation management, as monitoring will determine the maintenance and vegetation management needs across the Project Site. Monitoring vegetation during the active growing season (May-November) is a key aspect of adaptive management and will be useful in identifying issues, tracking progress, and reevaluating management needs.

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 establishment and longevity of the planted species. Areas outside of the Preliminary Development Area will be maintained in a manner consistent with the surrounding land use.

The Applicant will restore and reclaim the site to a pre-construction condition, as practicable, consistent with the requirements of the Project lease. The Applicant currently assumes that most of the site will be re-vegetated after decommissioning and will implement appropriate measures to facilitate such uses. However, the landowner may choose to redevelop the land for other uses depending upon the landowners' desires and the development opportunities in the area at the time of decommissioning. If no specific use is identified, the Applicant will plant unvegetated portions of the site with a perennial seed mix. The goal of restoration in that instance will be to maintain natural hydrology and the plant communities growing on the site during operation of the Project to the greatest extent practicable while minimizing new disturbance and removal of existing vegetation.

3.7 Operations and Maintenance Practices

Following commissioning and commercial operation, the care, custody, and control of the Project facilities transfers from the construction team to the operations staff. The construction manager works with the operations staff, the equipment suppliers, and other construction and maintenance personnel to ensure a

smooth transition from the start of construction to the COD of the Project. The operations staff will have full responsibility for the BESS Facility to ensure O&M are conducted in compliance with approved permits, prudent industry practices, and the equipment manufacturer's recommendations. The Applicant anticipates O&M will be housed in the existing LSP Cottage Grove Cogeneration Facility.

The Project will be professionally maintained and operated by the Applicant, an affiliate, and/or a qualified contractor. Primary tasks include regularly scheduled inspection(s) of electrical equipment, vegetation management, as well as snow removal on access drives and within the BESS area, as needed.

The Applicant estimates that the Project will result in one to two full-time positions to operate and maintain the Project facilities. A maintenance plan will be created for the Project to ensure the performance of the BESS facilities, including a scheduled check of the main items and a predictive maintenance approach of the devices subjected to derating/degradation. Once construction is complete, the BESS Facility is expected to see one delivery truck on-site monthly, with potentially more personnel on-site at intervals associated with scheduled maintenance, estimated approximately twice-monthly visits with passenger vehicles. The main scheduled activities are described in more detail in Table 3.7-1 below.

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.

3.7.1 Equipment Inspection

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

- **BESS**: Performance verification, check of air filters, HVAC system, and monitoring;
- **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;
- **Project gen-tie line, 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.

3.7.2 Facility Maintenance

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.

3.7.3 Maintenance Frequency

Table 3.7-1 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 on-site O&M staff.

Table 3.7-1: Project Operations & Maintenance Tasks and Frequency

Plant Device	Task	Anticipated Frequency
BESS	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
MVT Skids	Visual Check	Once Yearly

3.8 Decommissioning

The objective of decommissioning is to restore the site to a condition that will facilitate its pre-construction use at the end of operation. At the end of the Project's operational life, the Applicant will either take necessary steps to continue operation of the Project (such as re-permitting and retrofitting) or will decommission the Project and remove facilities. A draft Project Decommissioning Plan is included in Appendix I.

At the end of commercial operations, the Applicant will be responsible for removing all BESS components and associated facilities. At the end of the Site Permit term, the Applicant reserves the right to extend operations of the Project by applying for an extension of the permit, if necessary, and continuing operation. Should the Applicant 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 (25 years) would include removing the battery storage enclosures (which include batteries and other auxiliary equipment), transformers, underground cables and lines, equipment pads and foundations, ancillary equipment, fencing, and the associated Project Substation. Standard decommissioning practices will be used, including dismantling and repurposing, salvaging/recycling, or disposing of the BESS improvements, and restoration. The Applicant will provide written notice to the Commission, landowners, affected parties, counties, and other local units of government at least 90 days prior to the start of decommissioning activities. These parties will again be notified once decommissioning activities have been completed. A draft Decommissioning Plan is provided in Appendix I and is generally summarized below.

3.8.1 Timeline

Decommissioning is estimated to take approximately 15 weeks to complete, and the Applicant will ensure that all equipment and materials are recycled or disposed of properly.

3.8.2 Financial Resource Plan

The Applicant will be responsible for all costs of decommissioning the Project and associated facilities. Decommissioning of the Project is expected to cost approximately $2,143,416 with an estimated scrap/salvage value of $272,919. The Applicant anticipates establishing a financial assurance in the form of an escrow account, surety bond, or other form suitable to the MPUC equal to the costs to ensure proper decommissioning, less the estimated scrap/salvage value. Consistent with MPUC recommendations, the Applicant anticipates starting to fund the financial assurance not later than year 10 or operation, with payments increasing so that the financial assurance is fully funded by the end of Project Life.

The Applicant will submit a revised Decommissioning Plan every five years, or 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 amount of the financial assurance will be adjusted accordingly to offset any increases or decreases in decommissioning costs and salvage values determined during each plan reassessment. At that time, the Applicant will either enter into a surety bond agreement and create an escrow account or create a reserve fund for decommissioning purposes. The Applicant 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 is provided in the Decommissioning Plan in Appendix I.

3.8.3 Removal and Disposal of Project Components

Typical construction equipment to be used during decommissioning will include, but is not limited to, skid steers, loaders, bulldozers, dump trucks, and decompaction equipment. The following removal and disposal methods are typical for LFP BESS used industry wide; however, the Decommissioning Plan will be updated in the event the technology evolves or changes. The removal and disposal details of the Project components are found below:

- **Battery and Battery Enclosures:** The BESS enclosures will be discharged to the manufacturer's recommended level for transport, removed from the foundations and disposed of per the Site Permit requirements. No disassembly of battery modules will be required on-site. The LFP batteries will be shipped to a qualified facility for dismantling and recycling of separated components. The refrigerant/coolant from HVAC units will be collected into separate enclosures on-site and can be reused or recycled after processing. All electrical equipment will be disconnected and disassembled to be reconditioned and reused, sold as scrap, recycled, or disposed of appropriately. Foundations and underground cables and duct banks will be removed to a depth of four feet. Topsoil will be reapplied to the disturbed area. Soil and topsoil will be de-compacted, and the site will be restored to the pre-construction condition and re-vegetated.
- **Substation:** All aboveground equipment within the substation perimeter fence as part of decommissioning, including all steel, conductors, switches, transformers, and other components will be disassembled and taken off-site to be recycled or reused. The salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All non-recyclable materials will be transported to approved disposal facilities. The underground equipment and foundations associated with the substation will be removed to a depth of four feet. The voids left from the removal of underground equipment will be backfilled with stockpiled soils and fine grading the area to provide proper drainage. Topsoil and subsoil will be decompacted in a manner to adequately restore the material to a density consistent for vegetation. Additionally, any permanent stormwater treatment facilities will be removed.
- **Equipment Foundation and Ancillary Foundations:** All structural concrete foundations for the equipment pads will be pulled out completely. Duct banks will be excavated to a depth of four feet. During decommissioning, all unexcavated areas compacted by equipment may be compacted by equipment and, if compacted, the area will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent to promote plant growth. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Project Applicant's sole discretion, consistent with applicable regulations and industry standards.
- **Underground Cables and Lines:** All underground cables and conduits will be removed to a depth of four feet. Facilities deeper than four feet may remain in place to limit vegetation and surface disturbance. Underground cables that are around equipment pads will be completely removed up to a length of 25 feet around the perimeter of the pads. Prior to any excavation, topsoil will be segregated and stockpiled for later use, and the subsurface soils will be staged next to the excavation. The subgrade will be compacted to a density similar to the surrounding soils to promote plant growth and maintain drainage. Topsoil will be redistributed across the disturbed area.
- **Transformers and Ancillary Equipment:** All electrical equipment within the Project Site will be disconnected and disassembled. Any oil containing devices not designed to be shipped with fluids will be drained into appropriate sealed containers for recycling. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.
- **Fence:** All fence parts and foundations will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at The Applicant's sole discretion, consistent with applicable regulations and industry standards. Fence posts can be pulled out using skid-steer loaders or other light equipment. The surrounding areas will be restored to pre-construction conditions to the extent feasible.

- **Access Roads:** Facility access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the landowner, using one of the following processes:
    - After final clean-up, roads may be left intact through mutual agreement of the landowner and the Applicant unless otherwise restricted by federal, state, or local regulations; and
    - If a road is removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately at the Applicant's sole discretion, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. Internal service roads are constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. Any ditch crossing connecting access road to public roads will be removed unless the landowner requests it remain. The subgrade will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

The Applicant will restore land use following decommissioning to pre-construction conditions to the extent feasible in accordance with the preliminary VMP (Appendix H).

The decommissioning effort will implement BMPs to minimize erosion and to contain sediment on the Project to the extent practicable, and the following reclamation activities will be performed:

(1) Minimize new disturbance and removal of existing and native vegetation to the greatest extent practicable.
(2) Remove BESS 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.
(3) Any topsoil that is removed from the surface for decommissioning will be stockpiled to be reused when restoring plant communities or when restoring agricultural uses. Once decommissioning activity is complete, topsoil will be respread to assist in establishing and maintaining plant communities.
(4) Stabilize soils and return them to vegetation, according to the landowner direction.
(5) During and after decommissioning activities, install erosion and sediment control measures, 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.
(6) 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 15 weeks after the end of commercial operations.

3.8.4 Post-Restoration Monitoring

Decommissioning of the Project will comply with the NPDES/SDS Construction Stormwater (CSW) General 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/SDS CSW General Permit and SWPPP and other applicable requirements. In addition, The Applicant's Field

Representative assigned to decommissioning monitoring will stay in contact with the landowner, including on-site check-ins until the NPDES/SDS CSW General Permit is closed.

3.9 Future Expansion

The Applicant has no plans to expand the proposed Project footprint beyond the current Project Site at this time. As noted above, the Project Site encompasses approximately 6.8 acres of privately-owned land for which the Applicant has secured land rights from LSP-Cottage Grove LP. Land used for development of the Project, except for the access road corridor, will be leased from one landowner for up to 30 years. Access to the access road corridor is provided by the executed Shared Facilities Agreement between LSP-Cottage Grove LP and LSP CG Storage. Additionally, the Applicant has made an interconnection request from MISO for up to 80 MW, 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. Therefore, no expansion of the Project is anticipated.

Should the Applicant seek to expand the Project in the future, the Applicant may upgrade the BESS technology to increase nameplate capacity or may expand the Project outside of the fenced area. The Applicant would seek necessary permits and, if necessary, additional leases, required for any expansion of the Project.

The expected operational life of the Project is 25 years, after which, the Applicant reserves the right to extend operations of the Project consistent with any necessary permits or permit amendments. Should the Applicant 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.

3.10 Repowering

As the energy storage market continues to produce less expensive and more efficient BESS modules, repowering the Project may be a viable option as the Project ages. Potential triggers for initiating a repower may be aging or faulty equipment, maintenance costs, extending the operational life of the Project, or increasing the generation output of the Project. The Applicant will continually evaluate the Project's generation output, maintenance costs, and other contributing factors in conjunction with available technology upgrades to determine if repowering the Project is a worthwhile investment. Any proposed repowering of the Project will abide by all local, state, and federal regulations. A new Site Permit may be necessary and will be sought out if required.

4.0 COST AND SCHEDULE

The Applicant estimates the total installed capital cost for the entire Project will be approximately $135 million, as broken down in Table 4.0-1 below. Actual capital costs depend on various factors, such as construction labor, Project equipment and materials, electrical and communication systems, taxes/tariffs, and final design considerations (e.g., Project Substation, etc.).

Operating costs are estimated at approximately $3.1 million per year, totaling $77.6 million over a 25-year period including an anticipated Long Term Service Agreement with Sungrow, labor, materials, and lease payments for the entire Project (BESS and interconnection facilities). The primary costs of O&M for the

Project are associated with maintenance of BESS and Balance of Plant components and applicable inspections. Initial O&M costs for the electrical system will be nominal for the first few years of operation because the lines will be new and minimal maintenance should be required.

Table 4.0-1: Estimated Project Costs

Task	Cost
Real Estate, Permitting, & Offtake Origination	$747,837
Interconnection	$31,078,999
Environmental Review, Engineering, & Design	$5,561,482
Procurement	$63,312,930
Construction	$30,612,376
Decommissioning	$2,143,416
Project Total	**$133,457,039**

The Applicant anticipates receiving Commission approval of the Site Permit for the Project in Q3 or Q4 2026. Construction is currently anticipated to begin in Q1 2027, with COD currently anticipated by Q2 2028. To meet the anticipated COD, the following schedules are anticipated for the various phases of Project development. The schedule provided assumes MISO interconnection study completion according to dates posted by MISO. Delays to the MISO schedule will result in delays to the overall Project schedule.

- **Land Rights:** The Applicant has secured land rights through a shared facilities agreement with LSP-Cottage Grove, L.P., the owner of the LSP Cottage Grove Cogeneration Facility, allowing the Applicant's use of the Project Site (including the existing access road to the Project Site) and the existing LSP Cottage Grove Cogeneration Facility substation and interconnection facilities. In addition, Applicant will enter into a lease with LSP-Cottage Grove, L.P. to further secure its land rights for the development of the entire Project. All land required for the Project, except for the access road, will be leased, with all equipment being owned by LSP CG Storage.
- **Site Permit:** The Applicant anticipates the Commission will issue the Site Permit in Q3 2026 or Q4 2026 under the Standard Review timelines.
- **Other Permits:** The Applicant is responsible for obtaining permits and approvals necessary for construction and operation of the Project (see Section 2.4). The Applicant is working with applicable regulatory staff and anticipates pertinent permits/approvals to be issued by Q1 2027, prior to the start of construction.
- **Equipment Purchase:** The Applicant anticipates procuring Project equipment starting in 2025 and continuing through 2027. Final equipment and contractor selections will be made contingent on the Site Permit issued by the Commission.
- **Financing:** The Applicant will secure financing for all necessary Project stages, and financial ability has been obtained for the Project. Prior to the start of construction, the Applicant will obtain additional financing once all regulatory approvals have been secured for the Project. The decommissioning financing schedule will be built around the required Project escrow payments along with other relevant information (see Section 3.8).
- **Construction:** The Applicant 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, electrical cabling, transmission, and communications equipment installation work. Construction is anticipated to occur between the

Q2 2027 to Q2 2028. The Applicant 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 Q2 2028.
- **Operation:** As indicated above, the COD of the Project is anticipated to occur in Q2 2028, after construction and testing/commissioning activities are completed.
- **Decommissioning**: The Applicant will determine at the end of the Project's operational life if the Applicant will either take necessary steps to continue the operation of the Project (such as re-permitting or retrofitting) or will decommission the Project and remove facilities. Should the Applicant choose to decommission, the anticipated start of the decommissioning process will be Q4 2053.

5.0 ALTERNATIVE SITES CONSIDERED BUT REJECTED

Minn. Stat. § 216I.05, subd. 3(b)(14), requires an applicant to identify any alternative sites that were considered and rejected for the Project. Based on the MPUC Guidance, although applicants are not required to propose alternative sites, applicants must discuss alternative sites that were considered but rejected. The Applicant did not consider any alternative sites. The Applicant selected the proposed Project Site due to minimal environmental impacts, proximity to the electrical grid and existing transmission infrastructure, affiliated land ownership, and available capacity on the grid to which the Project will interconnect.

6.0 ENVIRONMENTAL ASSESSMENT

Minn. Stat. § 216I.07, subd. 3(a) requires that projects identified in Minn. Stat. § 216I.07, subd. 2(7) (energy storage systems) prepare and submit an EA with the Application under the Standard Review process. The Project meets the definition of an energy storage system and therefore, an EA is required in this Application. The EA provided in this section contains information regarding the Project's human and environmental impacts and addresses mitigating measures for identified impacts. An EA is the only required state environmental review document for this Project.

The mitigation measures discussed throughout this EA include language typically included in site permits issued by the Commission. This text is meant to be illustrative of typical conditions but may not be consistent with any Site Permit issued by the Commission for this Project. Ultimately, the conditions within the Site Permit specific to this Project will be developed through the record in this proceeding.

The following sections provide a detailed assessment of the potential environmental, human health, socioeconomic, safety, and other relevant impacts associated with the proposed Project under Minn. Stat. § 216I.05, subd. 4 and the MPUC Guidance. Where applicable, each section addresses specific resource areas and includes a description of the existing environment, potential Project-related impacts, and proposed mitigation measures. Mitigation strategies are tailored to the environmental resource under consideration to avoid, minimize, or offset adverse effects in accordance with environmental best practices and Minn. Stat. § 216I.05, subd. 4(10).

6.1 Terms and Concepts Used to Analyze Impacts

For approximating areas of temporary impact from the Project, the Applicant used the Preliminary Development Area. A potential impact is the likely change to an existing condition caused either directly or indirectly by the construction and operation of a proposed project. Potential impacts can be positive or negative, short- or long-term, and, in certain circumstances, can accumulate incrementally. Impacts vary in duration and size, by resource, and across locations.

Direct impacts occur at the same time and place. Indirect impacts are further removed in distance or occur later in time. The Applicant considered direct and indirect impacts that are reasonably foreseeable, which means a reasonable person could anticipate or predict the impact. Cumulative potential effects are the result of the incremental impacts of the proposed action in addition to other projects in the environmentally relevant area.

Impacts vary based on duration, size, and location. When considering duration, short-term impacts are generally associated with construction. Long-term impacts are associated with the operation and usually end with decommissioning and restoration. Permanent impacts extend beyond the decommissioning stage. For size, potential impacts are described quantitatively if possible. Location is considered in its potential uniqueness.

The context of an impact can range from beneficial to harmful and at varying intensity levels. This section uses the following terms to describe and analyze potential impacts:

- **Negligible** – Negligible impacts do not alter an existing resource condition or function and are generally not noticeable to an average observer. These short-term impacts affect common resources.
- **Minimal**—Minimal impacts do not considerably alter an existing resource condition or function. Minimal impacts might, for some resources and at some locations, be noticeable to an average observer. These impacts generally affect common resources over the short- or long-term.
- **Moderate**—Moderate impacts alter an existing resource condition or function and are generally noticeable or predictable for the average observer. Impacts may spread out over a large area, making them difficult to observe, but can be estimated by modeling or other means. Moderate impacts might be long-term or permanent to common resources but are generally short- to long-term for rare and unique resources.
- **Significant**—Significant impacts alter an existing resource condition or function to the extent that the resource is severely impaired or cannot function. Significant impacts are likely noticeable or predictable for the average observer. Impacts may spread out over a large area, making them difficult to observe, but can be estimated by modeling. Significant impacts can be of any duration and may affect common and rare and unique resources.

Also discussed are opportunities to avoid, minimize, correct, or compensate for potential impacts, collectively, “mitigation measures.”

6.2 Regions of Influence

The Applicant analyzed potential impacts to human and environmental resources within specific geographic areas called regions of influence (ROI; Table 6.2-1). The following ROIs are generally used while determining potential impacts, but additional ROIs with specific distances from the Project Site may be used where more appropriate.

- Project Site – The 6.8 acre area for the Project as depicted in the Maps
- Project Vicinity – 1,600 feet from the boundary of the Project Site
- Project Area – One mile from the boundary of the Project Site
- Census Tract – Census tracts crossed by the Project Site.
- Region – Washington County

Table 6.2-1: Regions of Influence for Human and Environmental Resources

Resource Category	Resource Type	Region of Influence
Human Settlement	Aesthetics, Emergency Services, Recreation	Project Area
	Cultural Values, Socioeconomics	Region
	Displacement, Land Use and Zoning	Project Site
	Environmental Justice	Census Tract
	Property Values	Project Vicinity
	Noise	Within 3,200 feet of the Project Site
Public Health and Safety	Worker and Public Safety, Hazardous Wastes, Electric and Magnetic Fields, Stray Voltage	Project Site
Public Services	Roads and Traffic	Project Area
	Railroads, Electric utilities, Pipelines, Water and Wastewater, Television, Radio, Telephone, and Internet	Project Vicinity
	Airports	Within 10 miles of the Project Site
Land-based Economies	Agriculture, Forestry, Mining, Tourism	Project Site
Archaeological and Historic Resources		Project Area
Natural Resources	Geology, Soils, Surface Water, Vegetation, Wildlife (non-avian) and their Habitats	Project Site
	Groundwater, Wildlife (avian), Rare and Unique Natural Resources	Project Vicinity
	Greenhouse Gases, Climate Change, Air Quality	Region

6.3 Environmental Setting

The Project Site is located within the existing LSP Cottage Grove Cogeneration Facility at the northern

edge of an industrial area in the City of Cottage Grove, Minnesota, north of the Mississippi River. The Project Site is adjacent to the Cottage Grove Substation to the east and the Chemolite Substation to the west. Land use in the area is mixed with heavy industrial uses and a railroad to the south, a shooting range to the northeast, and agricultural fields immediately to the north and east. Other surrounding land uses include industrial, commercial and residential developments, parks and open space, and a golf course. The Mississippi River is 0.6 mile south of the Project Site. A majority of the Project Site consists of developed lands, maintained herbaceous lands, and one man-made wetland within the southern portion of the Project Site (Map 5). There are no other waterbodies or waterways within the Project Site.

Major roads in the area include U.S. Highway 10/61 to the north and Miller Road to the south. The Project Site will be accessed from Innovation Road and 105th Street Court South. Innovation Road is managed by Washington County while 105th Street Court South is managed by the City of Cottage Grove. The Canadian Pacific Railway is located about 175 feet southwest of the Project Site boundary at the closest point. There are several overhead transmission and distribution lines in the area connecting to the existing Cottage Grove substation, Chemolite Substation, or both. The Applicant will utilize the existing Cottage Grove Substation (located within the LSP Cottage Grove Cogeneration Facility) and expand the substation to sufficiently handle the recharging or dispatch of electricity for the Project.

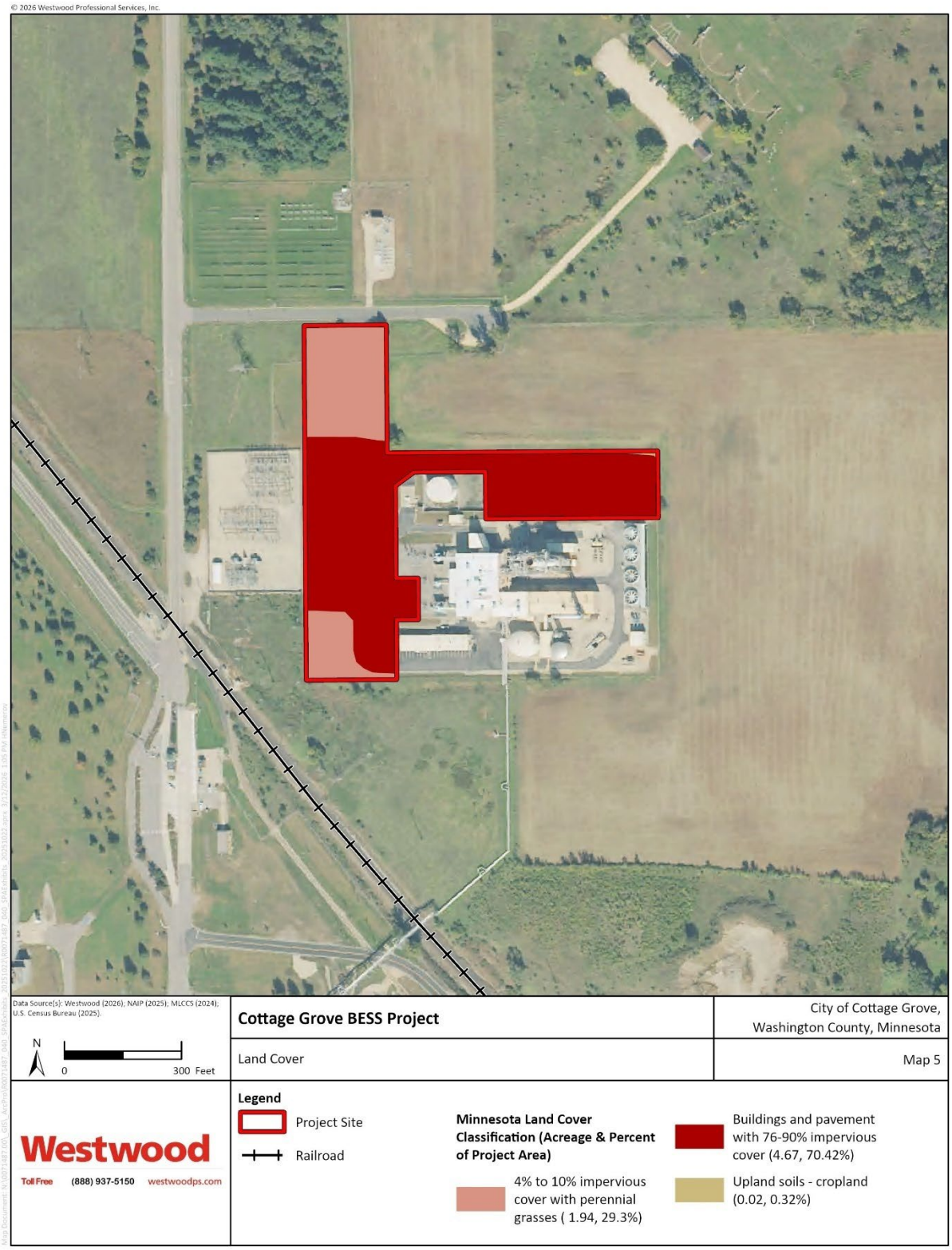
The DNR and the U.S. Forest Service have developed an Ecological Classification System (ECS) for ecological mapping and landscape classification in Minnesota that is used to identify, describe, and map progressively smaller areas of land with increasingly uniform ecological features. Through the ECS, 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 Section (222M), and the St. Paul-Baldwin Plains Subsection (222Md).[17]

The St. Paul-Baldwin Plains Subsection is located along the eastern border of south-central Minnesota and continues into Wisconsin. It consists of a Superior Lobe end moraine complex in the north, has terraces associated with the Mississippi River in the west, and coincides with the southern edge of the Rosemount Outwash Plain in the south. The subsection is dominated by a large moraine and areas of outwash plain. There are some areas of loess plain over bedrock or till in the southeastern portion of the subsection. It encompasses part of the seven-county metropolitan area and is affected by urban development. The topography is rolling to hummocky (steep, short complex slopes) on the moraine and level to rolling on the outwash. Depth of drift over bedrock in this subsection is generally less than 100 feet, with maximum thickness of 200 feet. Soils are primarily Alfisols, with areas of Mollisols on the outwash plains. Parent materials consist of clay loams, loams, sandy loams, and loamy sands on the moraines, sandy mixtures on the outwash plains. Annual precipitation ranges from 28 inches in the north to 31 inches in the south, with 12.5 to 13 inches of growing-season precipitation. The growing season typically lasts between 146 to 156 days. The drainage network is poorly developed through most of the subsection, with the Mississippi River cutting through the center and the St. Croix River forming the eastern boundary. Pre-settlement vegetation was primarily oak and aspen communities, but tallgrass prairie and maple-basswood forest were common. Currently, the predominant land use in this subsection is urban development. There are small areas of forest in the eastern portion that are becoming scarce as urban development continues. Significant recreational activity in this subsection occurs along the Mississippi and St. Croix River corridors. Fire is the most important disturbance within the subsection. Tornados and high wind events have also created significant

[17] DNR. Ecological Classification System. https://www.dnr.state.mn.us/ecs/index.html. Accessed February 2026.

disturbances. Periodic flooding occurs in river and stream valleys.[18]

[18] DNR. St. Paul-Baldwin Plains and Moraines Subsection. https://www.dnr.state.mn.us/ecs/222Md/index.html. Accessed February 2026.



Map 5: Land Cover

6.4 Human Settlement

Human settlement in the Project Area includes industrial developments, mixed uses, single family residential developments, commercial developments, parks and open space, a golf course, agricultural fields, U.S. Highway 10/61, the Canadian Pacific Railway, overhead transmission and distribution lines, and local roads. Construction and operation of the Project have the potential to impact human settlement. Potential impacts and measures to mitigate these impacts are discussed below.

6.4.1 Aesthetics

Aesthetics refers to the visual quality of an area as perceived by the viewer and forms the impression a viewer has of an area. Aesthetics are subjective, meaning their relative value depends upon the perception and philosophical or psychological responses unique to individuals. Impacts to aesthetics are equally subjective and depend upon the sensitivity and exposure of an individual. How an individual values aesthetics, as well as perceived impacts to a viewshed, can vary greatly. Generally, residents and recreationalists are more likely to perceive visual disturbances as negative compared to individuals passing through an area.

A viewshed includes the natural landscape and built features visible from a specific location. Natural landscapes can include wetlands, surface waters, distinctive landforms, and vegetation patterns. Buildings, roads, bridges, and power lines are examples of built features.

6.4.1.1 Existing Environment

The Project will introduce new manmade structures into the existing industrial landscape. The Project Area is characteristic of an urbanized landscape. Recreational opportunities and scenic vistas are limited within the Project Area but occur along the Mississippi River corridor, which supports boating, fishing, and shoreline recreation. Viewsheds in this area are generally limited by the surrounding natural and built environment. Prominent horizontal features include U.S. Highway 10/61 and the Canadian Pacific Railway. Prominent vertical features include the Cottage Grove Cogeneration Facility, transmission and distribution line pole structures, the Chemolite substation to the north and west of the Project Site, and the 3M industrial campus can be seen from considerable distances and are the tallest and the most dominant visual features on the landscape. A small solar farm that appears nonoperational is located immediately north of the Project Site and a shooting range is located about 50 feet northeast of the Project Site. There are no designated Minnesota Scenic Byways in the Project Area.[19]

Based on review of available aerial photography, there are no residences located on parcels adjacent to the Project Site. The closest residence is located approximately 0.5 mile northeast of the Project Site (Figure 6). There are 65 houses located within one mile of the Project Site, all located north of the Project over 0.5 mile away. There are no farmsteads within the Project Area.

[19] MnDOT. Minnesota Scenic Byways. https://www.dot.state.mn.us/scenicbyways/. Accessed January 2026.

Figure 6: View Looking South from the Nearest Residence

Photo simulations showing existing and proposed conditions were based on the preliminary site design and existing conditions. Photos were simulated from locations looking north, south, east, and west (Appendix J). Figure 7 provides an illustrative representation of the proposed Project and from an aerial view.

Figure 7: Aerial view showing proposed Project layout

6.4.1.2 Potential Impacts

The ROI for aesthetics is the Project Area. Portions of the Project may be visible from local roads. The BESS enclosures will occupy less than half of the Preliminary Development Area. The majority of the remaining Preliminary Development Area will be gravel for access roads, Project Substation, stormwater basins, or buffer areas between the BESS enclosures. Most of the BESS Facility will be a non-descript neutral color, with the majority of components being less than 10 feet in height. The Project Substation is anticipated to be less than 50 feet in height, with the tallest portion of the Project anticipated to be a 60 to 90-foot-tall pole for construction of the Project gen-tie line. The Project is situated east of and adjacent to the existing Chemolite Substation. It is unlikely that the Project will be visible from any residences based on distance, vegetation, and existing vertical structures.

Exterior security lighting will be installed at the Project Substation and within the BESS pad areas. Switch activated lights will be located at each BESS enclosure to allow for maintenance and repair. Impacts to light-sensitive land uses are not anticipated given the industrial location and the minimal required lighting for operations.

For these reasons, aesthetic impacts are not anticipated and expected to be minimal.

6.4.1.3 Mitigation Measures

Minimizing aesthetic impacts from facilities is primarily accomplished by locating the facilities so that they are not immediately adjacent to homes, ensuring that damage to natural landscapes during construction is minimized, and shielding the facilities from view by terrain or vegetation. Impacts from facility lighting can be minimized by using shielded and downward facing light fixtures and using lights that minimize blue hue. The Applicant is considering potential screening options including slats within the fences. The existing topography of the site naturally screens the Project from the north as seen in the Photo Simulations completed for the Project (Appendix J).

The Sample Site Permit provided by Commission staff on March 25, 2025 (Appendix K) includes several standard conditions that help minimize aesthetic impacts from the Project.

- The Permittee shall consider input pertaining to visual impacts from landowners and the local unit of government having direct zoning authority over the area in which the Project is located.
- The Permittee shall use care to preserve the natural landscape, minimize tree removal and prevent any unnecessary destruction of the natural surroundings in the vicinity of the Project during construction and operation.

The Applicant fully intends to comply with the standard conditions during final design and construction.

6.4.2 Cultural Values

Cultural values can be defined as shared community beliefs or attitudes that define what is collectively important to the group. These values provide a framework for individuals and community thought and action. Infrastructure projects believed inconsistent with these values can deteriorate community character. Those found consistent with these values can strengthen it.

6.4.2.1 Existing Environment

Cultural values can be informed by ethnic heritage. There are no Tribal owned reservations or trust lands in the Project Area.[20] Historically, Grey Cloud Island (now known as Grey Cloud Island Township) was home to the only known Native American village within Washington County, however, the Dakota and Ojibwe Tribes that lived in Washington County relocated outside of the county after the Treaties of 1837. The Mississippi River is within the Project Area and is also an important waterway to multiple Tribes . According to the U.S. Census Bureau, the majority of the population in Washington County identifies as White.[21] The population is comprised of 81.2% White, followed by 8.7% Asian, 6.5% Black or African American, 5.7% Hispanic or Latino, with lesser percentages consisting of American Indian, Native Hawaiian/Other Pacific Islander, and other origins.[22]

[20] University of Minnesota. 2025. Minnesota Natural Resource Atlas, Tribal Lands. https://mnatlas.org/resources/?id=k_0059. Accessed February 2026.

[21] USCB. 2020. Washington County – Profile of General Population and Housing Characteristics: DP1 Table. https://data.census.gov/table/DECENNIALDP2020.DP1?q=Washington+County,+Minnesota&d=DEC+Demographic+Profile. Accessed February 2026.

[22] U.S. Census Bureau. 2020. Washington County, Minnesota - Census Bureau Tables. https://data.census.gov/table?q=Washington%20County,%20Minnesota. Accessed February 2026.

The majority of the population in the City of Cottage Grove also identify as White.[23] The region surrounding the Project has cultural values tied to the area's early New England, German, and Native American heritage.[24] There are organizations dedicated to preserving the history and heritage of Washington County, including the Washington County Historical Society which manages the Washington County Heritage Center and other historical sites, and the Washington County History Network.[25, 26] The City of Cottage Grove has historical ties to agricultural and industrial frameworks. The City of Cottage Grove's modern identity is more strongly shaped by industry, retail, and manufacturing.[27] The City of Cottage Grove maintains the history of the area through the city's Advisory Committee on Historic Preservation, its Comprehensive Cultural Resource Management Plan, and Chapter 4 – Historic Preservation Element of the city's 2040 Comprehensive Plan.[28], [29] Cultural representation in community events is reflected in the arts, cuisine, agricultural produce, and holidays. Annual local and regional events, festivals, and fairs are generally associated with parks & recreation or agriculture and typically do not have a primary focus of ethnic heritage, such as Strawberry Fest, Cottage Grove Food Truck Festival, and the Hometown Holiday Celebration and Holiday Train.[30]

Cultural values are also informed by work and leisure pursuits, for example, farming and recreational use of waterways, as well as land use. Through its strategic planning initiatives, Cottage Grove has prioritized economic development and tourism. The City of Cottage Grove Strategic Plan[31] includes focus areas of increasing awareness and access to existing resources and improving infrastructure to support increased use and attendance. Strategies under the plan include partnering with public or private sector stakeholders as well as objectives for growth of a healthy workforce.

In its 2040 Comprehensive Plan (adopted October 2020), the City of Cottage Grove establishes a long-range framework to guide growth and infrastructure investment while advancing environmental stewardship as a defining community value. The Comprehensive Plan applies a resilience-based planning lens, recognizing that resilient land use and energy systems can reduce greenhouse gas emissions and help the city adapt to climate-related risks. Within this context, the Comprehensive Plan supports the development of emerging energy infrastructure, including facilities that support grid reliability, while emphasizing thoughtful siting and compatibility with surrounding land uses.

The Comprehensive Plan anticipates that large-scale energy facilities with substantial land and buffering needs should be directed to areas where urban services are difficult to extend and where conflicts with

[23] USCB. 2020. City of Cottage Grove – Profile of General Population and Housing Characteristics: P1 Table. https://data.census.gov/table?g=160XX00US2713456. Accessed February 2026.

[24] Washington County Historical Society. Cottage Grove. https://www.wchsmn.org/cottage-grove/. Accessed February 2026.

[25] Washington County Historical Society. Our History. https://www.wchsmn.org/. Accessed February 2026.

[26] Minnesota Alliance of Local History Museums. Minnesota Regional History Groups. https://www.mnhistoryalliance.org/regional-history-groups. Accessed February 2026.

[27] City of Cottage Grove. Made in Cottage Grove. https://www.cottagegrovemn.gov/554/Made-In-Cottage-Grove. Accessed February 2026.

[28] City of Cottage Grove. Advisory Committee on Historic Preservation (ACHP). https://www.cottagegrovemn.gov/340/Advisory-Committee-on-Historic-Preservat. Accessed February 2026.

[29] City of Cottage Grove. History. https://www.cottagegrovemn.gov/399/History. Accessed February 2026.

[30] City of Cottage Grove. Hometown Holiday. https://www.cottagegrovemn.gov/650/Hometown-Holiday. Accessed February 2026.

[31] City of Cottage Grove and Discover Cottage Grove. 2025. Strategic Plan: Cottage Grove. February 2025. https://www.cottagegrovemn.gov/DocumentCenter/View/5895/CVB-Strategic-Plan?bidId=. Accessed February 2026.

established or planned residential development can be minimized. It further underscores the importance of protecting high-quality agricultural resources, indicating that energy-related facilities should be steered away from prime farmland and toward marginal or less productive lands where feasible. By encouraging zoning and land use tools that balance infrastructure needs with community character, agricultural preservation, and environmental protection, the Comprehensive Plan provides a policy foundation under which a proposed BESS project, appropriately sited, buffered, and designed, aligns with Cottage Grove's long-term goals for resilience, sustainability, and orderly development.[32]

Construction of the proposed Project aligns with goals and initiatives described in the City of Cottage Grove Comprehensive Plan.

6.4.2.2 Potential Impacts

The ROI for cultural values is the Region. Construction of the proposed Project is not expected to conflict with the cultural values or ethnic heritage of the area because the Project is located within the existing Cottage Grove Cogeneration Facility in an existing industrial area.

Impacts to cultural values are not anticipated and are considered to be negligible.

6.4.2.3 Mitigation Measures

The Sample Site Permit contains conditions addressing mitigation measures to avoid impacts to cultural properties including implementation of procedures and training for workers. An Unanticipated Discoveries Plan will be prepared for the Project that will outline the steps to be taken if previously unrecorded cultural resources or human remains are encountered during construction. The Mississippi River will be protected from impacts by implementation of the Stormwater Management Plan (Appendix G). Because impacts to cultural values are anticipated to be negligible, no additional mitigation measures are proposed.

6.4.3 Displacement

Displacement can occur when residences or other buildings are located within a proposed site. If the buildings would potentially interfere with the safe operation of a project, they are typically removed from the site and relocated. Displacements from large energy facilities are rare and are more likely to occur in heavily populated areas where avoiding all residences and businesses is not always feasible than in rural areas where there is more room to adjust site boundaries to accommodate the proposed energy facility.

6.4.3.1 Existing Environment

As previously indicated, the Project Site is located within the existing LSP Cottage Grove Cogeneration Facility. There are no residences located within the Project Site. There are two existing industrial buildings within the Project Site will be demolished to accommodate the BESS Facility.

[32] City of Cottage Grove. 2040 Comprehensive-Plan. https://www.cottagegrovemn.gov/DocumentCenter/View/926/2040-Comprehensive-Plan?bidId=. Accessed January 2026.

6.4.3.2 Potential Impacts

The ROI for displacement is the Project Site. Two existing buildings will be demolished before construction; no other structures are located within the Project Site. Removal of these buildings will not result in displacement of residents or businesses. The Applicant and LSP-Cottage Grove LP (owners of the Cottage Grove Cogeneration Facility) have a Shared Facilities Agreement that allows the demolition of the buildings.

Impacts related to displacement are not anticipated and are considered to be negligible.

6.4.3.3 Mitigation Measures

There are no conditions included in the Sample Site Permit that directly address mitigation for impacts to displacement. Because no displacement impacts are anticipated, no mitigation measures are proposed.

6.4.4 Environmental Justice

The MPUC applies the MPCA's Environmental Justice Guidance to proposed projects. In their Guidance, the MPCA understands environmental justice to mean the "fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income in the development, implementation, and enforcement of environmental laws, regulations, and policies."[33] The purpose of considering impact to environmental justice communities is to ensure that all people benefit from equitable levels of environmental protection and have the same opportunities to participate in decisions that might affect their environment or health. Minority and/or low-income communities are often concentrated in small geographical areas within the larger geographically and/or economically defined population. Minority communities and low-income communities may constitute a very small percentage of the total population and/or geographical area.[34]

The MPCA maintains the Minnesota Areas of Environmental Justice Concern interactive map that identifies areas of environmental justice concern within the state of Minnesota.[35] The MPCA uses U.S. Census Bureau's 2023 Cartographic Boundary File, the five-year (2018–2022) American Community Survey data, tribal areas derived from the U.S. Census Bureau's 2023 Cartographic Boundary File and MnDOT Tribal Governments in Minnesota 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, and locations within Indian Country, which is defined as federally recognized reservations and other Indigenous lands.

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

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[34] Environmental Protection Agency (EPA). 1998. Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses. https://www.epa.gov/sites/default/files/2015-04/documents/ej-guidance-nepa-compliance-analyses.pdf. Accessed December 2025.

[35] MPCA. 2023. Understanding Environmental Justice in Minnesota Story Map. Updated 2025. https://experience.arcgis.com/experience/bff19459422443d0816b632be0c25228/page/Page?views=Income. Accessed January 2026.

MPCA is using data from 2018–2022, the poverty threshold is calculated based on the 2022 data. In 2022, an individual in the U.S. was considered to be in poverty with an income of $13,590 or less, according to the 2022 Poverty Threshold Data Table,[36] therefore, 200% of the poverty level would be calculated at $27,180 per person.

6.4.4.1 Existing Environment

The Commission requires project proposers to identify "whether the proposal is located in an environmental justice area using census criteria in Minn. Stat. § 216B.1691, subd. 1(e)." That statute defines an environmental justice area in Minnesota as meeting one or more of the following criteria:

(1) 40 percent or more of the area's population is nonwhite;
(2) 35 percent or more of households in the area have an income that is at or below 200 percent of the federal poverty level;
(3) 40 percent or more of the area's residents over the age of five have limited English proficiency; or
(4) the area is located within Indian Country, as defined in United State Code, title 18, section 1151.

The Project is in Census Tract 714. Based on the MPCA environmental justice criteria, the Project is not within any MPCA-identified area of concern for environmental justice as shown in Table 6.4-1.

Table 6.4-1: Environmental Justice Data

Location	Population	Percent Total Minority[1]	All Individuals with Income Below 200% of Poverty Level	Language Other Than English Spoken at Home
Minnesota	5,695,292	22.3%	22.4%	12.0%
Washington County	268,651	20.2%	22.4%	11.1%
City of Cottage Grove	39,274	21.6%	13.2%	10.9%
Census Tract 714	8,131	20.4%	10.5%	8.1%

[1] "Minority" refers to people who reported their ethnicity and race as something other than White Alone.

Source: 2022 ACS 5-Year Estimates Detailed Tables – B01003 Total Population; B03002 Hispanic or Latino by Race; S1701 Poverty Status in the Past 12 Months; S1601 Language.

Section 6.4.9 (Socioeconomics) describes the population and economic profile of the region, the local economy, and labor force.

6.4.4.2 Potential Impacts

The ROI for Environmental Justice is the Census Tract. Census Tract 714 does not include any areas of environmental justice concern. Therefore, impacts to environmental justice areas of concern are not anticipated and are considered to be negligible.

[36] U.S. Census Bureau. Poverty Thresholds for 2022 by Size of Family and Number of Related Children Under 18 Years. https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html. Accessed January 2026.

6.4.4.3 Mitigation Measures

The Project Site is not located within an environmental justice area of concern, no mitigation measures are proposed.

6.4.5 Public Health and Safety

Construction and operation of all projects involve some risk of injury or harm. BESS and substation facilities have certain unique risks in the construction and operation that pose a moderate impact to the health and safety of workers and public. Emergency services that will respond to an emergency or safety concerns will vary depending on the situation. Possible agencies that will respond include, but are not limited to, the City of Cottage Grove Police Department, Cottage Grove Fire Department, Cottage Grove EMS, and Washington County Sheriff's Department. More details on emergency services can be found in Section 6.4.6.

6.4.5.1 Existing Environment

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 a BESS 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.

Worker and Public Safety

Like any construction project, there are risks. These include potential injury from falls, equipment and vehicle use, electrical accidents, etc. Construction might disturb existing environmental hazards on-site, for example, contaminated soils. In addition to the typical operational risks associated with an electric facility (falls, electrical accidents, etc.) battery storage facilities include a heightened risk of thermal runaway events and fires. During operation there are occupational risks similar to those associated with construction. Public risks would result from unauthorized entry into the facility.

As described in Section 3.3.6 (Fencing), permanent security fencing with lockable gates will be installed along the perimeter of the BESS Facility to comply with applicable electrical codes. Only authorized personnel, or those escorted by authorized personnel, will be allowed entry, and signs will be posted to warn unauthorized persons not to enter fenced areas.

Additionally, signage at the Project substation will warn of high voltage equipment due to the potential dangers associated with unauthorized entry. These precautions are intended to prevent accidental electrocution from happening to someone who may have otherwise unintentionally wandered onto the site.

Hazardous Wastes

The Applicant conducted a preliminary review of the EPA “MyEnvironment” database and map to identify federally listed sites that may have previously documented environmental impacts. A review of this information indicates that five hazardous waste designated sites associated with the Resource Conservation and Recovery Act (RCRA) and one Toxic Release to Land designated site are in a one-mile buffer of the

Project Site. No RCRA sites were identified within the Project Site.[37] The closest identified site is located approximately 53 feet from the Project Site.

Data from the MPCA "What's in My Neighborhood" website was accessed on November 7, 2025. 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 55 records within one mile of the Project Site.[38] While there are no records within the Project Site, the records occurring on sites found in a one-mile buffer of the Project Site are listed below:

- 21 Construction stormwater sites;
- 10 Air Quality sites;
- 6 Hazardous Waste sites;
- 5 Investigation and Cleanup sites;
- 3 Aboveground storage tank site;
- 3 Water Quality sites;
- 2 Pollution Prevention sites;
- 1 Solid Waste site

The records listed above are located outside of the Project Site and will not be impacted by the Project.

A Phase I Environmental Site Assessment was conducted for the Project Site, dated October 24, 2025. One recognized environmental condition (REC) and one controlled recognized environmental condition (CREC) were identified. The term REC means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term CREC means a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

[37] EPA MyEnvironment. https://enviro.epa.gov/myenvironment/. Accessed January 2026.

[38] MPCA What's in My Neighborhood. https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=9d45793c75644e05bac197525f633f87. Accessed January 2026.

The identified REC and CREC are listed below:

- During the site reconnaissance, one approximately 755,000-gallon fuel oil tank was observed approximately 15 feet outside of the Project Site, directly adjoining the Project Site to the south. The above ground storage tank was observed to be in fair condition and was situated within secondary containment; however, due to the material threat of release the tank poses we consider this to be a REC for the Project Site.
- The Project Site is located within the east-metro per- and poly-fluoroalkyl substances (PFAS) plume groundwater area of concern. Additional investigation of PFAS in groundwater at the Project Site is not necessary, given the Minnesota 3M PFAS/PFC Settlement which ensures both safe drinking water and the enhancement of natural resources in response to the PFAS. The Project Site being mapped within the east-metro is considered a CREC for the Project Site. A CREC is different from a REC in that the contamination is known about and is actively undergoing remediation efforts. Remediation efforts for PFAS in the groundwater area of concern is covered as part of the 3M PFAS/PFC Settlement. These efforts do not include any restrictions on development in the Project Site.

Electronic and Magnetic Fields

All electrical devices generate electric and magnetic fields (EMF). Electric fields arise from the voltage or electrical charges, while magnetic fields arise from the flow of electricity or current that travels along transmission lines, power feeder lines, substation transformers, house wiring, and electrical appliances. The intensity of the electric field is related to the voltage of the line, and the intensity of the magnetic field is related to the current flow through the conductors (wire). EMF can occur both indoors and outdoors.

According to the U.S. National Cancer Institute, there is no consistent evidence demonstrating an association between any source of non-ionizing EMF and cancer.[39] Further, the Minnesota State Interagency Working Group on EMF Issues conducted literature reviews and research on EMF, concluding that "the current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects."[40] Considering the available evidence on EMF exposures to date, the Commission has found that "there is no demonstrated impact on human health and safety that is not adequately addressed by the existing State standards for exposure."[41]

Sources of EMF associated with the Project include electrical feeder lines within the facility, the transformers installed at each inverter, and the Project Substation. EMF from electrical feeder/collection lines and transformers dissipates rapidly with distance from the source. In general, higher voltage electrical lines produce higher levels of EMF at the source before dissipating with distance.

[39] National Cancer Institute. 2019. Electromagnetic Fields and Cancer. https://www.cancer.gov/about-cancer/causes-prevention/risk/radiation/electromagnetic-fields-fact-sheet. Accessed January 2026.

[40] The Minnesota State Interagency Working Group on EMF Issues. 2002. A White Paper on Electric and Magnetic Field (EMF) Policy and Mitigation Options. https://apps.commerce.state.mn.us/eera/web/project-file?legacyPath=/opt/documents/EMF%20White%20Paper%20-%20MN%20Workgroup%20Sep%202002.pdf. Accessed January 2026.

[41] 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).

Presently, there are no Minnesota regulations pertaining to magnetic field exposure. However, the International Commission on Non-Ionizing Radiation Protection has established accepted guideline for the general public exposed magnetic fields is 833 milligauss (mG).[42]

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 one meter (3.28 feet) above ground. The standard was designed to prevent serious hazards from shocks when touching large objects parked under AC transmission lines of 500 kV or greater.

Stray Voltage

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 livestock along with the more robust electric system designs in place. The Applicant will integrate all electrical components associated with the Project, including inverters and transformers, into the regional transmission grid and will be grounded in full compliance with the National Electric Safety Code.

In an industrial setting such as the Project Site, adherence to these standards will ensure 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.

6.4.5.2 Potential Impacts

The ROI for public health and safety is the Project Site.

Worker and Public Safety

The inflow of temporary construction personnel could increase demand for emergency and public health services. On the job injuries of construction workers requiring assistance due to slips, trips or falls, equipment use, or electrocution can create a demand for emergency, public health, or safety services that would not exist if the Project were not to be built. Although no road closures are anticipated during construction, any temporary closures could impede police, fire, and other rescue vehicles access to the site of an emergency.

To prevent health and safety incidents, the Applicant 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 6.4.6. The Applicant will ensure workers have proper training to successfully complete required construction activities while reducing risks associated with it.

[42] National Institute of Environmental Health Sciences (NIEHS). 2002. Electric and Magnetic Fields Associated with the Use of Electric Power. 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 January 2026.

Impacts to workers and the public are not anticipated and are considered to be minimal**.**

Hazardous Wastes

During construction, the possibility exists that large quantities of hazardous materials or petroleum products will be stored at the Project Site. The storage of these materials would be contained within proper tanks. 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.

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 LSP Cottage Grove Cogeneration Facility in accordance with applicable state and federal regulations including requirements to develop site specific plans and responses.

Impacts from hazardous materials and contaminated sites are not anticipated and are considered to be **minimal.**

Electronic and Magnetic Fields

Project-specific EMF levels were not modeled for the proposed electrical collection lines or inverters; however, studies have documented EMF levels for similar equipment. A Canadian study of electrical lines at a wind facility with a project substation measured the magnetic fields of the wind farm's 27.5 kV buried electrical lines—slightly lower voltage than the electrical feeder lines proposed for the Project. The study found magnetic fields associated with buried electrical collection lines to be within background levels at one meter above ground and up to 16.5 mG directly beneath overhead 27.5 kV lines.[43] As demonstrated by the study, magnetic fields will be well below the Minnesota guidelines for electric fields (8 kV/meter) and international guidelines of 833 mG for magnetic fields. Additionally, since the transformers are enclosed in a grounded metal case (i.e., shielded), the transformers typically emit small, if any at all, EMF. The battery side of the system operates in DC, with the cells operating at approximately 50 volts, depending on the technology chosen. DC electricity does not emit an electric field due to the frequency of DC electricity being zero hertz. Rather DC electricity creates a stationary magnetic field that degrades at an exponential rate. Based on the system voltage, no measurable magnetic field will be created beyond the Project fence line.

The National Institute of Environmental Health Sciences (NIEHS) provides typical EMF levels for 115 kV transmission lines. Typical EMF levels for a 115 kV transmission line electric field directly below the transmission line were reported at 1.0 kV/meter before dissipating to 0.5 kV/meter at 50 feet (approximate edge of ROW). Similarly, average magnetic fields directly below the transmission line were reported at 29.7 mG before dissipating to 6.5 mG at 50 feet.[44]

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[43] 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. https://pubmed.ncbi.nlm.nih.gov/24529028/. Accessed February 2026.

[44] National Institute of Environmental Health Sciences (NIEHS). 2002. Electric and Magnetic Fields Associated with the Use of Electric Power.

Impacts from EMF are not expected to negatively affect human health and are anticipated to be negligible.

Stray Voltage

The Project will adhere to state electrical codes to ensure 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.

6.4.5.3 Mitigation Measures

Public and Worker Safety

The Applicant will ensure workers have proper training to successfully complete required construction activities while reducing risks associated with it. Emergency and safety signage will also be posted as necessary. The Applicant will also coordinate with all emergency and non-emergency response teams for the Project, as needed, including a formal training session prior to construction commencing. An Emergency Response Plan will be prepared for the Project prior to development which will include details surrounding potential extraordinary events with safety and response measures. Emergency services for responding to public health and safety emergencies are further described in Section 6.4.6.

Hazardous Wastes

To avoid potential impacts to water and soil resources, all hazardous materials stored outdoors will be stored within secondary containment. Secondary containment will contain leaks in the event that they occur.

An SPCC Plan will be required for the MPT located in the Project Substation, as well as for oil-filled operational equipment (e.g., inverter/transformer) or bulk oil storage. If used, the SPCC Plan will detail the appropriate storage, cleanup, and disposal of oil products associated with the Project. The transformers will be properly contained per EPA requirement. Any monitoring, transportation, or handling of materials will be conducted by trained and qualified personnel utilizing established procedures and proper equipment and in accordance with applicable laws. The SPCC Plan will be completed prior to construction and kept on-site during construction and will meet all EPA requirements. If needed for the operational phase of the Project, a separate SPCC Plan will be completed prior to Project operations.

Electronic and Magnetic Fields

No health impacts from EMF are anticipated. EMF diminishes with distance from a conductor or inverter. The nearest home is approximately 3,170 feet from the Project Substation and 2,596 feet from the nearest inverter. At these distances both electric and magnetic fields will dissipate to background levels. No additional mitigation is proposed.

Stray Voltage

Grounding of electrical equipment, lines, and other applicable infrastructure will be completed in adherence to federal and state standards to prevent injury and ensure proper infrastructure functionality. Inspection of

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 February 2026.

grounding will be done prior to operation. Any changes or failures in grounding electrical infrastructure will be identified through the Project's SCADA system.

6.4.6 Emergency Services

Emergency services are essential services provided by a variety of entities within specified areas. Emergency services may consist of local police departments, fire departments, public or private ambulance services, hospitals, or emergency communication infrastructure. Emergency services and the likely responding parties in Cottage Grove and Washington County are discussed below.

6.4.6.1 Existing Environment

Police, Fire, and Ambulance Services

The Project is in Washington County which, according to the U.S. Census Bureau's QuickFacts website, has a population density of 695.5 persons per square mile of land area. The City of Cottage Grove has a population density of 1,154.5 persons per square mile. If emergency personnel were needed at the Project, multiple agencies would likely respond, depending on the situation. These include the Washington County Sheriff, city of Cottage Grove police departments, and city and volunteer fire departments in Cottage Grove. The Cottage Grove Fire Department #4 is located within approximately two miles of the Project Site. The Cottage Grove Police Station is located approximately two and a half miles from the Project Site.

Ambulance response is provided by regional and local ambulance services. The primary ambulance service for the Project Area is the Cottage Grove Fire Station in Cottage Grove.

Hospitals

Medical Care Facilities near the Project Area include Allina Health Cottage Grove Clinic (2.7 miles northwest), M Health Fairview Clinic – Cottage Grove (6.5 miles northwest), United Hospital – Hastings Regina Campus (7.6 miles southeast), and M Health Fairview Woodwinds Hospital (12.1 miles northwest).[45]

Allied Radio Matrix for Emergency Response

Three towers are part of the Allied Radio Matrix for Emergency Response (ARMER) in Washington County.[46] 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. The nearest ARMER tower is over 14 miles north of the Project Site in Oakdale.

[45] MN Geospatial Commons. 2020. Hospitals Serving Minnesota. https://gisdata.mn.gov/dataset/health-facility-hospitals. Accessed January 2026.

[46] Radio Reference. ARMER Sites and Frequencies. https://www.radioreference.com/db/sid/3508?siteSort=county#sites. Accessed January 2026.

6.4.6.2 Potential Impacts

The ROI for emergency services is the Project Area.

Police, Fire, and Ambulance Services

Potential impacts to emergency services are negligible to minimal. No permanent impacts to infrastructure or ability for agencies to provide emergency services are anticipated. There may be temporary impacts due to road closures during construction which may impede emergency services.

Thermal runaway is a phenomenon when a battery cell generates heat at a greater rate than the heat can dissipate from the cell, resulting in a cascading chemical reaction which produces additional heat. Thermal runaway events can result in extremely high temperatures, smoke, fire, and potentially ejection of gas, shrapnel, and particulate.[47]

Emergency response to fires or thermal runaway events at BESS facilities require specialized response. Fires at BESS facilities present unique challenges to firefighters. Unlike other utilities or industrial sites, BESS facilities do not have a single point of disconnect and, although separate parts of the system can be disconnected, the batteries will remain energized. Because of the gases that accumulate within containers during a thermal runaway event or fire, first responders should not approach or enter the containers. Because of the difficulty in extinguishing fires, the risk that some batteries will remain energized, and the potential exposure to toxic gas, the industry recommends that first responders monitor the event and allow fires to burn themselves out as the energy is depleted from the batteries.

Hospitals

No impacts to hospital operations are anticipated and therefore negligible.

Allied Radio Matrix for Emergency Response

Impacts to ARMER operations are not anticipated and therefore negligible.

6.4.6.3 Mitigation Measures

Mitigative measures for temporary road closures will be to limit the time of road closures to what is necessary to complete the task. Permits or approvals from the authority having jurisdiction over the road will be obtained prior to any closures.

Section 8.11 of the Sample Site Permit includes preparation of an ERP in consultation with the emergency responders having jurisdiction over the Project. The Applicant intends to prepare an ERP to detail the appropriate procedure during potential emergency situations at the Project Site (falls, electrocution, fire, etc). This ERP will be completed in consultation of the local emergency responders. The ERP would be provided to the MPUC prior to the pre-construction and pre-operation meetings. The Applicant has met with the City of Cottage Grove Fire Marshal to discuss the Project and will continue to provide opportunity for meetings and training of local emergency response teams throughout the permitting process. All

[47] UL Research Institutes. 2021. What is Thermal Runaway? https://ul.org/research-updates/what-is-thermal-runaway/. Accessed February 2026.

construction and operation personnel will be trained on the proper procedure to contact an emergency service when necessary. The Project Site and on-site personnel will allow any responding agency to access and administer the appropriate service required for the situation.

While BESS fires are unlikely, the Applicant designed the Project to use modular containers that are tested to ensure fire resistance. Modern BESS containers are designed to remove flammable gases during a thermal runaway event and relieve pressure within the container. All containers are spaced out to avoid the spread of a fire from one container to the next. Each BESS enclosure will be monitored constantly by the Project's SCADA system for changes in voltage and temperature. The combination of these design-based mitigation measures will reduce the likelihood of an emergency in which local agencies would need to respond or have a difficult time de-escalating the situation. In the event of a fire or other emergency at the Project Site, the Applicant will notify the MPUC within 24 hours.

Impacts to emergency services are not anticipated and are considered to be negligible to minimal.

6.4.7 Noise

Noise is defined as unwanted sound or disruptive sound that typically consists of a mix of frequencies and intensities. Noise is measured in the unit of decibels (dB) on a logarithmic scale to match human perception of how loud a particular sound is. Additionally, human hearing is not equally sensitive across all frequencies. To account for this, A-weighting (dBA) is used to reflect the typical sensitivity of human hearing. Common sound levels are shown in Figure 8. Humans are able to perceive a sound level change of approximately 3 dBA, a definable increase of 5 dBA, and doubling the perceived loudness of a noise of a 10 dBA increase. Distance also factors into how a noise is perceived. As noise travels over distance, the sound is perceived as less loud due to a sound's energy decreasing.[48]

[48] MPCA. 2015. A Guide to Noise Control in Minnesota. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf. Accessed January 2026.

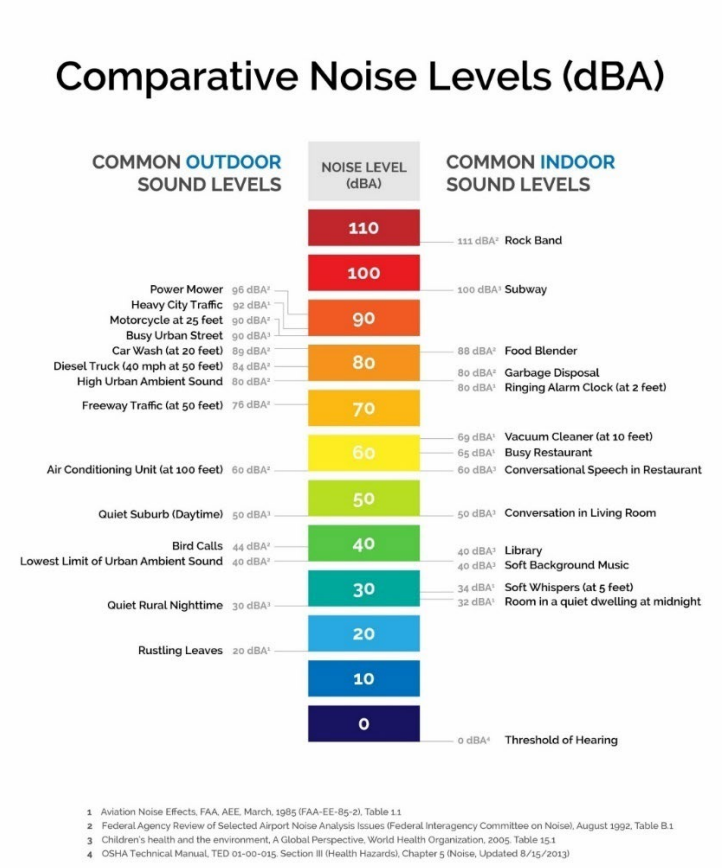

Figure 8: Common Indoor and Outdoor Noise Levels

6.4.7.1 Existing Environment

Existing noise sources in the ROI include the existing LSP Cottage Grove Cogeneration Plant and Chemolite Substation, 3M industrial campus to the south US-10, a rail line, a shooting range, farming equipment/operations, birdsong, and wind, all of which are expected to contribute to an elevated ambient noise level in the surrounding area.

Noise area classifications (NAC) are based on the land use at the location of the person who hears the noise, which does not always correspond with the zoning of an area. For example, the Project is located in the Heavy Industrial zoning district, and noise from the BESS Facility near a residential area is held to the NAC 1 standards if it can be heard on a residential property.[49] Some common land uses associated with NACs include:

- NAC 1: Residential housing, religious activities, camping and picnicking areas, health services, hotels, educational services.

[49] MPCA. 2015. A Guide to Noise Control in Minnesota. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf.

- NAC 2: Retail, business and government services, recreational activities, transit passenger terminals.
- NAC 3: Manufacturing, fairgrounds and amusement parks, agricultural and forestry activities.
- NAC 4: Undeveloped and unused land.

Although there is a NAC 4, there are no noise standards for these areas. A complete list is available at Minn. R. 7030.0050.

Noise standards within Minn. R. 7030.0040 are expressed as L_{10} and L_{50}, which are statistical noise level metrics representing the noise level that is exceeded 10% and 50% of the measurement period, respectively. Over a one-hour period, L_{10} represents the noise level exceeded six minutes per hour, while L_{50} represents the noise level exceeded 30 minutes per hour. Standards vary between daytime and nighttime hours. Table 6.4-2 provides current Minnesota noise standards.[50, 51]

Table 6.4-2: Minnesota Noise Standards

Noise Area Classification	Daytime Limit (dBA) (7:00 a.m. to 10:00 p.m.)		Nighttime Limit (dBA) (10:00 p.m. to 7:00 a.m.)	
	L_{10}	L_{50}	L_{10}	L_{50}
NAC 1	65	60	55	50
NAC 2	70	65	70	65
NAC 3	80	75	80	75

Noise modeling is most accurate predicting L_{eq} levels, which is the overall average of a measurement period. L_{10} levels are, on average, three dBA above L_{eq}, while L_{50} values are lower than L_{eq}. Thus, modeled L_{eq} can be compared to the L_{50} limits to ensure full compliance and conservatism. The use of L_{50} limits is appropriate for a BESS Facility based on the continuous operation of the facility when active. The visual relationship between the L_{eq}, L_{10}, and L_{50} metrics is shown on Figure 9.[52]

50 MPCA. 2015. A Guide to Noise Control in Minnesota. https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf. Accessed January 2026.

51 Minn. R. 7030.0040.

52 Federal Highway Administration. 2017. Sound Level Descriptors. https://www.fhwa.dot.gov/environment/noise/resources/fhwahep17053.pdf. Accessed January 2026.

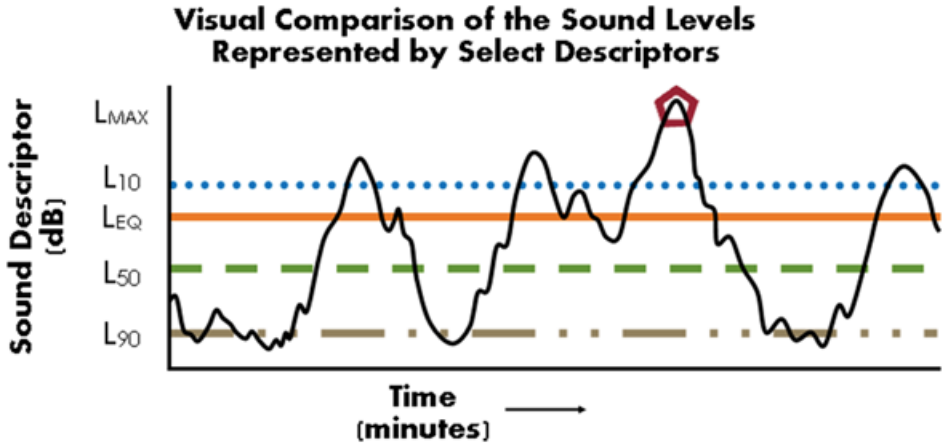

Figure 9: Comparison of Sound Level Metrics

6.4.7.2 Potential Impacts

The ROI for noise is within 3,200 feet of the Project Site. Potential noise sensitive receptors within the ROI consist of residential homes (Map 6). Households are classified under NAC-1 per Minn. R. Chapter 7030.0050, subp. 2. Upon review of aerial imagery, nine NAC-1 households are identified within 1,600 to 3,200 feet of the Project Site (Map 6).

The primary noise sources from the Project include the BESS enclosures and MVT skids. These systems generate noise during active system operation or power transfer into and out of the BESS Facility. Project noise levels were predicted using CADNA-A, a noise modeling software in conformance with International Organization for Standardization 9613-2, Attenuation of Sound During Propagation Outdoors – Part 2: General method of calculation. The Noise Impact Assessment is provided in Appendix L.

Minn. R. 7030 noise level limits refer to total noise level, which includes both ambient noise and Project-generated noise. To ensure that Project-generated noise does not cause or significantly contribute to an exceedance of the limits, in the absence of site-specific ambient noise measurements, limiting Project-generated noise levels at receptors to 5 dB below the corresponding total noise level limit is a generally accepted practice to show compliance with Minn. R. 7030. Given this, if total noise levels exceed the total noise limits, it will be primarily the result of non-Project noise contributions. As such, in this case, the Project is held to a 55 dBA Project-generated noise level limit. Should the Project operate at night and exceed allowed noise levels, mitigation measures described in Section 6.4.7.3 may be implemented to decrease noise levels at NAC-1 receptors.

Map 6: Residences Within 3,200 Feet

During construction, noise will be emitted by the construction vehicles and equipment onsite. The amount of noise will vary based on what type of construction is occurring at the Project on a given day. These noise impacts will be temporary and limited to daytime hours. Additionally, the Project's construction noise will likely be similar to noise emitted from the operation of the existing LSP Cottage Grove Cogeneration Facility, 3M industrial campus, and farm operations in the area.

For these reasons, noise impacts are not anticipated and considered to be negligible to minimal.

6.4.7.3 Mitigation Measures

The current layout and design of the BESS enclosures and transformers have been oriented to avoid directing noise to NAC-1 receptors. All receptors modeled at or below the applicable daytime Project noise level limit of 55 dBA and daytime compliance with Minn. R. 7030 is expected. As Project equipment likely will operate during the daytime only, strict compliance with nighttime noise level limits will be addressed only if nighttime equipment operations exist and complaints arise. Several other mitigation measures are under consideration in order to comply with state regulations. The potential mitigation measures under consideration by the Applicant include:

- Changing the BESS cooling module to a model with lower noise emitted,
- Reducing operation hours to daytime (7:00 a.m. to 10:00 p.m.),
- Reducing battery fan speeds (when able),
- Installing acoustic absorbent foam lining around cooling or BESS enclosures, and
- Constructing a noise barrier or sound wall to absorb and deflect sound emitted by the Project.

General conditions in the Site Permit requires the permittee to comply with noise standards established under Minn. R. 7030.0010 to 7030.0080 at all times and at all appropriate locations during operation of the Project. Included in this condition, the permittee is required to limit construction activities to daytime hours to the extent practicable (Appendix L). The Applicant will comply with the general conditions outlined in the Sample Site Permit and any special conditions in the Site Permit, such as post-construction noise monitoring. The Applicant will also ensure that equipment and vehicles are operated with properly functioning mufflers and noise-control devices.

6.4.8 Public Services

Public services are services provided by a governmental entity or by a regulated private entity to provide for public health, safety, and welfare. Public Services include transportation (roads, railroads, airports), local and regional utilities (electric, pipelines, sewer, water), and public communications (television, radio, telephone, internet). Emergency services are discussed in Section 6.4.6.

6.4.8.1 Existing Environment

Roads and Traffic

Access to the Project Site will be from an existing driveway off the city-managed 105th Street South (also listed as Ls Power Road South by MnDOT) located along the northern boundary that dead ends just before the shooting range driveway. Other local roads in the immediate area of the Project Site include Innovation

Road, 100th Street South, East Point Douglas Road South (Map 2). The nearest major road is U.S. Highway 10/61, located 0.5 mile north and east of the Project Site.

The Annual Average Daily Traffic (AADT) counts based on MnDOT's Traffic Count Database System application are provided in Table 6.4-3.[53] Based on 2019-2025 data, the highest existing AADT for roads near the Project Site is 34,459 vehicles per day along U.S. Highway 10/61; traffic volumes along county and city roads range from 40 to 7,535 vehicles per day.

Table 6.4-3: Annual Average Daily Traffic in the Project Area

Road Name/Location	Road Owner	Year	AADT Traffic Volume Total
100th Street South *North of U.S. Highway 10/61 and east of Kimbro Avenue South*	City	2019	40
Kimbro Avenue South *Southwest of 80th Street South*	City	2024	445
Kimbro Avenue South *North of U.S. Highway 10/61 and East Point Douglas Road South*	City	2021	498
100th Street South *East of Glendenning Avenue South*	City	2022	1059
100th Street South *South of U.S. Highway 10/61 and west of Innovation Road*	City	2022	1,085
East Point Douglas Road South *West of Innovation Road*	City	2022	6,063
Innovation Road (County Road 19) *South of U.S. Highway 10/61*	County	2024	2,471
Innovation Road South (County State Aid Highway [CSAH] 19) *North of U.S. Highway 10/61*	County	2024	7,535
U.S. Highway 10/61 *East of Innovation Road*	State	2024	34,035
U.S. Highway 10/61 *West of Innovation Road*	State	2024	34,459
U.S. Highway 10/61 east bound exit ramp *West of Innovation Road*	State	2019	4,740
U.S. Highway 10/61 east bound entrance ramp *East of Innovation Road*	State	2024	2,968
U.S. Highway 10/61 west bound entrance ramp *West of Innovation Road*	State	2024	2,816
U.S. Highway 10/61 west bound exit ramp *East of Innovation Road*	State	2022	1,954

[53] MnDOT. Traffic Count Database System. https://mndot.public.ms2soft.com/tcds/tsearch.asp?mod=tcds. Accessed February 2026.

Railroads

No railroads are located within the proposed Project Site. In the Project Vicinity, the Soo Railroad, owned by Canadian Pacific Railway, is located about 175 feet from the southwest corner of the Project Site and generally parallels 100th Street South. The railroad is used for transporting freight and intercity passengers. The crossing at Innovation Road is at grade.[54]

Airports

There are four airports and two seaplane bases located within 10 miles of the Project Site. The Sandy Flats Airport and Sky Meadow Airport are private airports located southeast of the Project Site. The Fleming Field-South St. Paul Municipal public airport, Wipline private airport, Winner's Landing private seaplane base, and Wipline private seaplane base are located west of the Project Site. The FAA Notice Criteria Tool was used to determine the need for filing Form 7460-1 (Notice of Proposed Construction). Two structures were submitted: a 10-foot BESS structure and a 75-foot transmission line structure. The results indicated that neither structure exceeded the Notice Criteria.

To ensure safety, both the FAA and MnDOT office of Aeronautics have established guidelines for the location of structures near airports. The FAA has height restrictions for development near public airports and guidelines for placement of buildings and other structures near high frequency omnidirectional range navigation systems. MnDOT has zoning areas around public airports that restrict the area where buildings and other structures can be placed. The restricted area (influence area) can extend several miles for an airport boundary.[55] The Project is located approximately five miles outside of the South St. Paul Municipal Airport – Fleming Field influence area.

Electric Utilities

There are four overhead 115 kV electrical lines within the Project Vicinity that are owned by Xcel Energy (Map 7). One transmission line is within the Project Site and travels between the LSP Cottage Grove Cogeneration Substation to the Chemolite Substation. Two transmission lines travel north and then west from the Chemolite Substation – one to the Cottage Grove Substation and one to the Linde Tap in Pine Bend. The fourth transmission line travels south of the Chemolite Substation and then east to the West Hastings Substation.[56] Xcel Energy serves the City of Cottage Grove including the LSP Cottage Grove Cogeneration Facility and the Project Site.[57]

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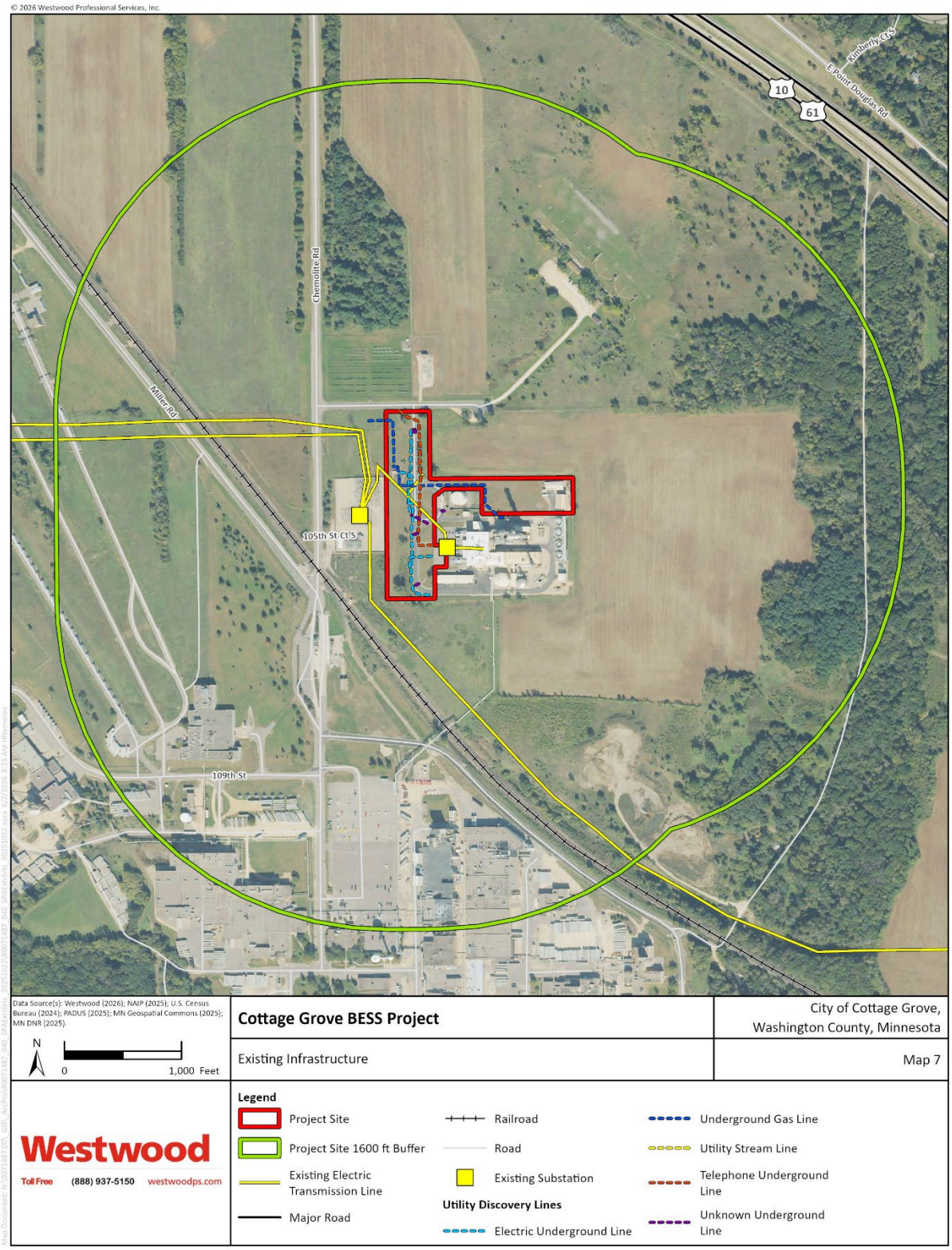
54 MnDOT. Minnesota Rail Viewer Application. https://www.arcgis.com/apps/webappviewer/index.html?id=5640f575a86148039704660c29126f24&extent=-11690507.5359%2C5234420.4958%2C-9081864.6346%2C6507555.6389%2C102100. Accessed February 2026.

55 MnDOT. Airport Influence Areas. GIS Shapefile. https://www.dot.state.mn.us/aero/airportinfluencemaps.html. Accessed February 2026.

56 Homeland Infrastructure Foundation Level Data. Electric Transmission Lines. https://www.dhs.gov/gmo/hifld. Accessed February 2026.

57 MPUC. Electric Utility Service Areas. https://minnesota.maps.arcgis.com/apps/webappviewer/index.html?id=95ae13000e0b4d53a793423df1176514/. Accessed March 2026.



Map 7: Existing Infrastructure

Pipelines

Westwood Professional Services LLC (Westwood) conducted a perimeter underground utility investigation within the LSP Cottage Grove Cogeneration Facility parcel and documented an 8-inch natural gas pipeline. The pipeline is operated by Minnesota Energy Resource Corporation and owned by WEC Energy Group (Map 7).[58] The pipeline enters the LSP Cottage Grove Cogeneration Facility in the northwest corner, connects to the aboveground compressor station before crossing the private road and running east past the aboveground storage tank, and then turns southeast where it terminates.

The National Pipeline Mapping System (NPMS) was reviewed to determine whether pipelines are present outside of the Project Site. Within the Project Vicinity, one natural gas pipeline to the south and west of the Project Site was identified as being operated by Northern Natural Gas Company.

Water and Wastewater

One water well (indicated as "Other Wells" on the Minnesota Well Index; Unique Well ID: 231872) is mapped within the southwest corner, however, the Applicant confirmed this well is located outside of the Project Site. There are six additional wells within the Project Vicinity. Four of these wells are "Other Wells" and two are "Sealed Wells."[59] The Cottage Grove 2040 Comprehensive Plan's Utility Staging Plan shows the Project is not within a 2040 Metropolitan Urban Service Area (MUSA) and will continue to be serviced by a private system.[60]

The Project will not require new water or wastewater services since the O&M duties will be performed at the existing LSP Cottage Grove Cogeneration Facility.

Television, Radio, Telephone, and Internet

Landline telephone service within the Project Vicinity is provided by Qwest;[61] however, the Project Site has an underground landline telephone service provided by Century Link traveling north to south along the private driveway that was located during the underground utility investigation.

Mobile service in the area is provided by many carriers, including AT&T, T-Mobile, and Verizon. Cable service providers include Midcontinent Communications and Xfinity. Other services that are operating in Washington County—such as fixed wireless, fiber, satellite, and DLS—include CenturyLink, Consolidated Communications, Frontier, Hiawatha Broadband Communications, HughesNet, LTD Broadband, Midcontinent Communications, NorthfieldWiFi, Southeast MN WiFi, Starlink, Tekstar Communications, T-Mobile, Velocity Telephone, Verizon, and Viasat.[62]

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58 NPMS. Public Viewer. https://pvnpms.phmsa.dot.gov/PublicViewer/. Accessed January 2026.

59 MDH. Minnesota Well Index. https://mnwellindex.web.health.state.mn.us/#. Accessed January 2026.

60 City of Cottage Grove. Cottage Grove 2040 Comprehensive Plan. https://www.cottagegrovemn.gov/DocumentCenter/View/926/2040-Comprehensive-Plan?bidId=. Accessed January 2026.

61 Minnesota Department of Commerce. 2026. Minnesota Telephone Exchange Boundaries. https://minnesota.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=a61fe43236994d43b097d439befb8e70. Accessed January 2026.

62 MN DEED. 2023. Minnesota Broadband Providers by County. https://mn.gov/deed/assets/providers-county_tcm1045-190762.pdf. Accessed December 2025.

6.4.8.2 Potential Impacts

The ROI for public services (except airports, roads and traffic) is the Project Vicinity. Large energy projects can impact public services, such as buried utilities or roads. These impacts are usually temporary, for example, road congestion associated with material deliveries. Impacts can be long term if they change the area in a way that precludes or limits public services.

Roads and Traffic

Transportation of materials, equipment, and people will utilize U.S. Highway 10/61 and the local roads within the Project Area to access the Project Site. During the construction phase, temporary impacts are anticipated on some public roads within the Project Area due to additional traffic and slow-moving construction vehicles. While unlikely, the Applicant may require Innovation Road or 105th Street South to be closed for a short period of time while construction materials and equipment are delivered and offloaded. Daily construction vehicle estimates are provided in Section 3.5.5. Costs associated with unanticipated damage to public roads caused by Project vehicles would be the responsibility of the Applicant. The additional Project vehicles traffic temporary impacts will be minimal. While unlikely, if road closures are required on Innovation Road or 105th Street South, these impacts would be short, temporary, and minimal.

Once construction is complete, the BESS Facility is expected to see one delivery truck on-site monthly, with potentially more personnel on-site at intervals associated with scheduled maintenance. The operation of the Project will add only a few vehicles on-site, making the impacts to roads and traffic negligible.

Railroads

Potential impacts on railroads are negligible. The Soo Railroad travels northwest to southeast, outside the western and southern borders of the Project Site. The closest point to the Project Site is within 175 feet but is unlikely to be impacted by Project construction or operation. Since no infrastructure is planned within the railroad ROW, no impacts are anticipated.

Airports

The ROI for airports is within 10 miles of the Project Site. The Project is located outside of designated airport influence areas. No impacts to airports are anticipated from the Project; therefore, impacts are considered to be negligible.

Electric Utilities

There are potential impacts to electric utilities within the Project Site. There is one overhead transmission line within the Project Site that is avoided in the Project design. Potential impacts are most likely during the construction phase due to increased equipment and machinery at the Project Site. The proposed infrastructure under the existing transmission consists mainly of paved road sections and an infiltration basin. These are unlikely to impact the transmission line during operation.

Pipelines

Impacts to pipelines could occur during construction if existing pipelines are disturbed. While there is a natural gas pipeline within the Project Site, the Project collection lines will cross the pipeline at different depths. The Applicant will coordinate the specifics of the pipeline crossing with the owner or operator prior

to construction and provide specific on-site instructions prior to any construction that may disturb pipelines. Applicant will also request a crossing agreement or similar encroachment agreement from the holder of the pipeline easement. The Applicant does not anticipate this will change project design.

Water and Wastewater

The Project is located outside of any current or future municipal water or wastewater service area.

Impacts to water supply or wastewater systems are not anticipated and are considered to be negligible.

Television, Radio, Telephone, and Internet

All communication infrastructure within the Project Site has been located and all crossings will take place at differing depths. No impacts to television, radio, telephone, satellite, or other internet-based communications within the Project Vicinity are anticipated.

Overall, construction-related impacts to transportation (roads, railroads, airports), local and regional utilities (electric, pipelines, sewer, water), and public communications (television, radio, telephone, internet) are expected to be minimal, and are associated with possible traffic delays. During operation, negligible traffic increases would occur for maintenance. Impacts are unavoidable but can be minimized.

6.4.8.3 Mitigation Measures

The Sample Site Permit requires that, during Project construction, the Permittee shall minimize any disruption to public services or public utilities (Appendix K). The Applicant 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. As stated above, Applicant will request a crossing agreement or similar encroachment agreement from the holder of the pipeline easement that will be crossed by Project collection lines, and crossing agreements for other services will be made, if necessary, with the applicable entity consistent with the Project design. The Project design has all collection line crossings or parallels to maintain safe separation distances or depths from any existing infrastructure. The Applicant will coordinate the specifics of the pipeline crossing with the owner or operator prior to construction and provide specific on-site instructions prior to any construction that may disturb pipelines. Any potential disruptions to a public service or utility will be temporary and restored at the earliest possible time.

Traffic and road impacts can be mitigated through BMPs, compliance with local traffic and road work permitting requirements, and ensuring safety measures are followed throughout construction. If road closures are necessary, the Applicant will work with the appropriate road authority to ensure all permits and approvals are in place prior to closure.

To accommodate interconnection, several critical upgrades are required at the existing Project Substation to ensure compatibility and continued reliability and safety. The necessary upgrades will include the installation of new protective relays and communication systems to coordinate with the energy storage system, 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. The Applicant will design the Project Substation to accommodate adjusted load dynamics and ensure compliance with all applicable

interconnection and utility standards and requirements.

No water wells or wastewater infrastructure will be installed because the existing O&M facility will be used for the Project. The Applicant will mitigate impacts to existing infrastructure by avoiding identified resources for the duration of the construction and operation of the Project.

6.4.9 Land Use and Zoning

Land use is the characterization of land based on what can be built on it and how the land is used. Zoning is a regulatory tool used by local governments (cities, counties, and some townships) to guide specific land uses within specific geographic areas. Land cover documents how much of a region is covered by forests, wetlands, impervious surfaces, agriculture, and other land and water types, including wetlands. Construction of the BESS will alter current and future land use and land cover in the Project Site. Land cover is discussed in Section 6.7.5 Vegetation.

6.4.9.1 Existing Environment

The Project is located in a predominantly industrial area within the City of Cottage Grove's jurisdiction. The Applicant reviewed the City of Cottage Grove's Comprehensive Plan during the siting and preparation of the Project design. Chapter Two of the 2040 Comprehensive Plan (Land Use Plan) establishes the land use designations for properties throughout the city and a schedule for staging new development. The Land Use Plan also serves as the basis for future decisions on transportation improvements, utility extensions, and expansion of the park and open space system.[63] The 2016 Generalized Land Use Map shows the Project Site in the Industrial and Utility category. Land uses in this category include research, manufacturing, distribution, assembly, and office uses. With the exception of the 3M Cottage Grove facility, industrial development will occur within the MUSA. The Project Site is located in an industrial area that is not located within the MUSA.[64]

The 2040 Future Land Use Map shows the Project Site and surrounding area will remain in the Industrial land use category.[65]

Washington County's 2040 Comprehensive Plan sets broad policies and strategies to direct the future growth and development in the areas of land use, transportation, water resources, parks, trails, and open space, housing, resilience and sustainability, and economic competitiveness. Chapter 4 of the Plan describes land use policies and growth strategies for the county that is conducive for BESS development in industrial areas.[66]

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63 City of Cottage Grove. Cottage Grove 2040 Comprehensive Plan. https://www.cottagegrovemn.gov/DocumentCenter/View/926/2040-Comprehensive-Plan?bidId=. Accessed January 2026.

64 City of Cottage Grove. n.d. Cottage Grove Interactive Zoning Map. https://cottagegrovemn.maps.arcgis.com/apps/webappviewer/index.html?id=30aa8ded46a5403fa921988ab1e91790. Accessed January 2026.

65 City of Cottage Grove. Cottage Grove 2040 Comprehensive Plan. https://www.cottagegrovemn.gov/DocumentCenter/View/926/2040-Comprehensive-Plan?bidId=. Accessed January 2026.

66 Washington County. 2040 Comprehensive Plan: A Policy Guide to 2040. https://www.washingtoncountymn.gov/DocumentCenter/View/21955/Washington-County-2040-Comprehensive-Plan-PDF.Accessed January 2026.

These plans and their years adopted can be found in Table 6.4-4 below.

Table 6.4-4: Comprehensive Plans Covering the Project Site

Comprehensive Plan	Governing Body Responsible for Plan	Year Adopted
Cottage Grove 2024 Comprehensive Plan	City of Cottage Grove	2018
Washington County 2040 Comprehensive Plan	Washington County	2019

Zoning laws are enacted to implement land use plans and goals. According to the zoning map for Cottage Grove, the Project Site is located within the Heavy Industrial (I-2) zoning district (Map 8). The I-2 district provides areas suitable for industrial uses which are more intense than the I-1 district, does not allow hide or animal processing, and may have greater impact to noncommercial land uses.

The Project Site is located within the Mississippi River Corridor Critical Area (MRCCA) Urban Mixed (UM) Overlay District. The MRCCA contains a mix of residential, commercial, industrial, and recreational uses unique to the City of Cottage Grove. Local MRCCA zoning regulations are administered by the city as an overlay district to guide current and future development including vegetation management, removal, and land alteration. These rules seek to protect wildlife habitat, natural scenery, and water quality and allow development to address crucial contemporary needs.[67]

The UM Overlay District includes large areas of industrial mixed uses. The UM Overlay District is managed to allow for future growth and potential transition of intensely developed areas that do not negatively affect public river corridor views and that protects bluffs and floodplains. Uses within the MRCCA are generally determined by underlying zoning. An additional provision for commercial and industrial facilities states that the expansion of existing facilities is allowed only when they can be served by existing public or private sewerage, water and transportation facilities, and where the expansion has been determined to have no impact on regional systems.[68]

The MRCCA coincides with the Mississippi National River and Recreation Area (MNRRA) boundary in the Project Area. See Section 6.4.10 (Recreation) for additional information on the MNRRA.

6.4.9.2 Potential Impacts

The ROI for land use and zoning is the Project Site. Because the state Site Permit supersedes all local zoning, building, and land use regulations and permitting, the City of Cottage Grove and Washington County land use and zoning ordinances do not apply to the Project. The Applicant will continue coordinating with the local jurisdictions to ensure compliance with other potential permits necessary for the Project, such as road use or ROW permits.

The Applicant anticipates minimal impacts to the current land use at the site for the duration of Project's

[67] City of Cottage Grove. Mississippi River Corridor Critical Area (MRCCA). https://cottagegrovemn.gov/646/Mississippi-River-Corridor-Critical-Area. Accessed February 2026.

[68] City of Cottage Grove. Zoning Ordinance. Chapter 13 Mississippi River Corridor Critical Area Overlay District. https://codelibrary.amlegal.com/codes/cottagegrovemn/latest/cottagegrove_mn/0-0-0-7454. Accessed February 2026.

operating life (anticipated to be 25 years). No permanent land use impacts are anticipated, since the Applicant will lease the site from the existing landowners and restore the site to the previous land uses or any other appropriate land use as determined by the landowner upon decommissioning of the Project. Additionally, the Project will not restrict or prohibit adjacent landowners from continuing the current use or changing to an alternative use.

The Project will be in compliance with the UM Overlay District requirements and no impacts are anticipated. The Project Site is greater than 50 feet from the Mississippi River , does not include bluff areas, and will not interfere with views of the Mississippi River. The Project is also located within an existing industrial area and would be generally in compliance with the underlying zoning district. Structures over 60 feet are allowed as a conditional use.[69] See Figure 6, Figure 7, and Appendix J for illustrative representations of how the Project will look once constructed.

As mentioned in Section 2.1.2, 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 the City of Cottage Grove or Washington County, although the review by the Commission will take local land use ordinances and zoning into consideration. The Applicant has communicated with the City of Cottage Grove Community Development department regarding the potential impacts the Project may pose on the land use and zoning and has entered into a Host Community letter agreement with the City. See Section 2.1 regarding the Site Permit and preemption of local permits and zoning.

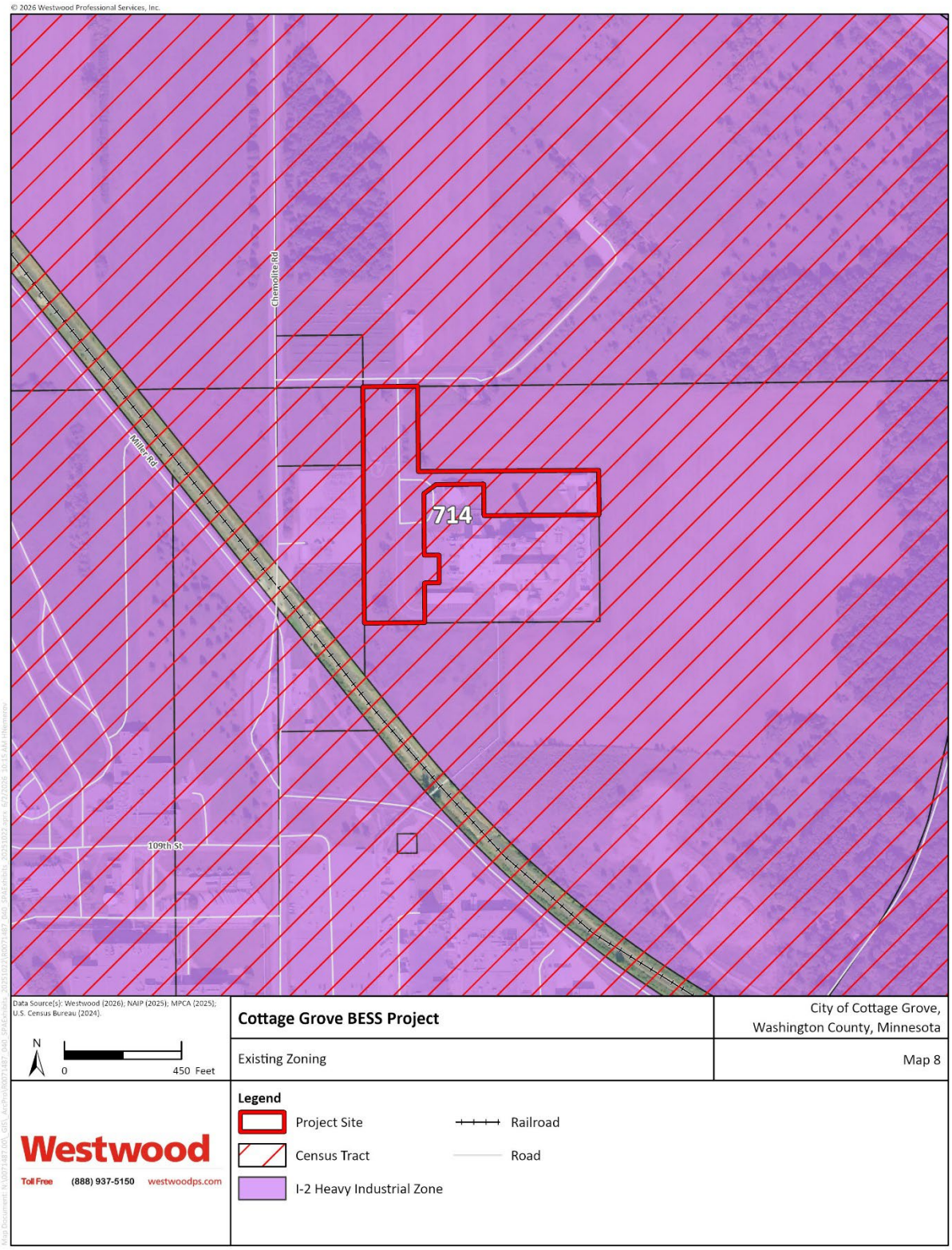
Impacts related to local land uses and zoning are not anticipated and are considered to be minimal.

6.4.9.3 Mitigation Measures

The Applicant has reviewed the local requirements for development and communicated with the City of Cottage Grove Community Development department. The City of Cottage Grove Community Development department provided comments on the current design of the Project which will be incorporated where feasible. Coordination will also occur to confirm the compliance with the MRCCA UM Overlay District. The Applicant has also incorporated local land use regulations where feasible within the design of the Project and will continue to work with the City of Cottage Grove Community Development department throughout Project development. The Applicant has also entered into a Host Community letter agreement that will support City of Cottage Grove services and economic development projects.

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

[69] City of Cottage Grove. Zoning Ordinance. Title 11 Zoning Regulations, Section 11-13-8. https://codelibrary.amlegal.com/codes/cottagegrovemn/latest/cottagegrove_mn/0-0-0-7499. Accessed February 2026.



Map 8: Existing Zoning

6.4.10 Recreation

Public and private lands provide a multitude of recreational opportunities such as fishing, hunting, hiking, biking, bird watching, camping, boating, swimming, and educational opportunities. These lands also provide a wide diversity of habitat that supports hundreds of species including birds, bats, amphibians, insects, and plants. There are various recreational opportunities in or near the Project Site. Information from the DNR, Washington County, the City of Cottage Grove, and other state and federal databases were reviewed to identify recreational resources within the Project Area. Minnesota Outdoor Recreation System Units and School Trust Lands were also reviewed. Recreation areas are shown on Map 9. No recreation lands are present within the Project Site.

6.4.10.1 Existing Environment

The City of Cottage Grove offers an extensive park system that includes over 2,000 acres of land for activities such as golf, walking and hiking trails, parks, indoor and outdoor skating rinks, natural open spaces, sports fields, and playgrounds. The nearest municipal recreation facilities include Cottage Grove Ravine Regional Park, located approximately 0.5-mile northeast of the Project Site[70] and River Oaks Municipal Golf Course, located approximately 0.5-mile southeast of the Project Site.

The Washington County Star Trail is a snowmobile trail located along 100th Street South, Innovation Road, and the south side of U.S. Highway 10/61 in the Project Area. The trail is located on the east side of Innovation Road, just west of the Project Site.[71] The Washington County Star Trail is a grant-in-aid trail that receives state funding for maintenance. The Washington County Star Trail Snowmobile Club maintains the trail.[72]

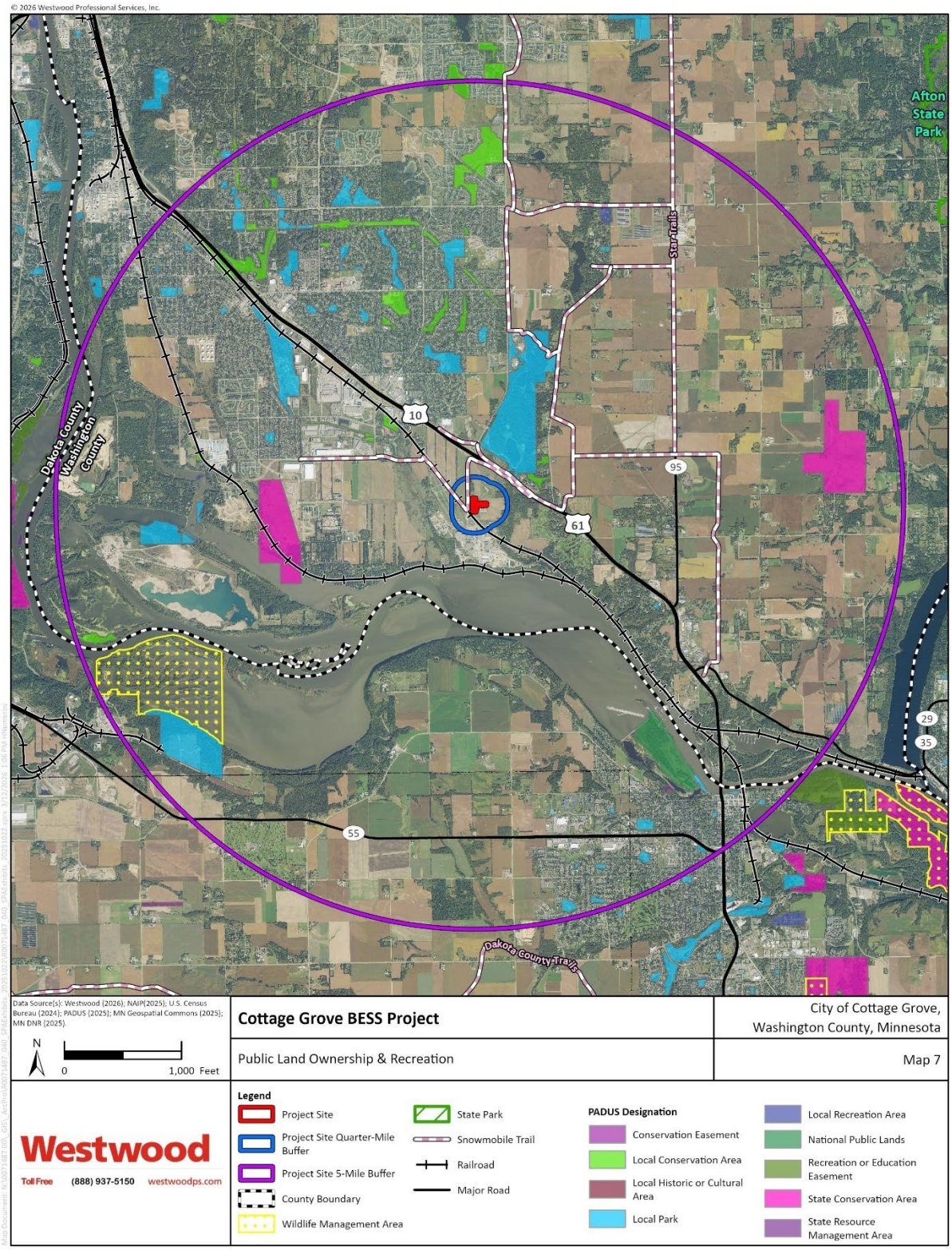
The 3M Club Trap and Skeet Club (a private shooting range) is located approximately 0.1 mile northeast of the Project Site.

At the state level, the Minnesota Outdoor Recreation System Units include areas administered by the

[70] City of Cottage Grove. Parks & Recreation. https://www.cottagegrovemn.gov/182/Parks-Recreation. Accessed February 2026.

[71] DNR. Minnesota Snowmobile Trails, 2024-2025 Season. https://gisdata.mn.gov/dataset/trans-snowmobile-trails-mn. Accessed February 2026.

[72] Washington County Star Trail Snowmobile Club. https://www.startrail.org/. Accessed February 2026.



Map 9: Public Land Ownership & Recreation

DNR.[73] Minn. Stat. Ch. 86A lists the Outdoor Recreation System Units as state parks, state recreation areas, state trails, SNAs, wilderness areas, state forests and state forest subareas, WMAs, state water-access sites, state wild, scenic, and recreational rivers, state historic sites, state rest areas, aquatic management areas, and state boater waysides.

There are no state parks, state trails, SNAs, wilderness areas, state forests or state forest subareas, state water-access sites, state wild, scenic or recreational rivers, state rest areas, aquatic management areas, state boater waysides, or fishery/aquatic management areas within the Project Area. The Mississippi River State Water Trail is just outside of the Project Area, about 1.1 mile south of the Project Site. State historic sites are discussed in Section 6.6 (Archaeological and Historic Resources).

School Trust Lands are public lands set aside to provide a continual source of funding for public education for every district in the state. The DNR serves as the Trustee for the 2.5 million acres of School Trust Lands and an additional 1 million acres of severed mineral rights on behalf of Minnesota's public schools.[74] There are no School Trust lands within the Project Area. The nearest school trust land (mineral estate) is just outside the Project Area, approximately 1.3 miles southeast of the Project Site.[75]

At the federal level, the Project Site is within the MNRRA.[76] The MNRRA is a 72-mile stretch of the Mississippi River that was established by Congress in 1988. The National Park Service (NPS) works with local governments and state agencies, and numerous organizations to protect the MNRRA. Abundant recreational opportunities exist within the MNRRA. In the Project Area, the MNRRA boundary coincides with the MRCCA boundary. See Section 6.4.9 (Land Use and Zoning) for information on the MRCCA zoning regulations.

The Mississippi River Trail Bikeway is also designated as U.S. Bicycle Route 45 and 45A. Segment 45A, an alternate route, travels along 100th Street South, Innovation Road, and East Point Douglas Road in the Project Area. The MRT is an on road trail in this segment.[77]

6.4.10.2 Potential Impacts

The ROI for recreation is the Project Area. The construction phase may result in temporary visual, auditory, and aesthetic impact to some visitors and local residents utilizing nearby recreation resources within the Project Area. As mentioned in Section 4.0 (Cost and Schedule), construction is anticipated to occur between the Q2 2027 to Q2 2028. The Applicant does not anticipate the need for road closures or that equipment deliveries will impact users of the snowmobile trail or the Mississippi River Trail Bikeway. Should traffic

[73] State historic sites are also administered by the Minnesota Historical Society, the Board of Regents of the University of Minnesota, governmental subdivisions of the state, or by county historical societies. State rest areas are administered by MnDOT, and state trails are administered by the DNR and MnDOT.

[74] DNR. Minnesota's School Trust Lands. https://www.dnr.state.mn.us/aboutdnr/school_lands/index.html. Accessed February 2026.

[75] DNR. Minnesota's School Trust Lands Web Map. https://mndnr.maps.arcgis.com/apps/webappviewer/index.html?id=16b4f7300b3e42d29c7717e2c8917d44. Accessed February 2026.

[76] National Park Service. Mississippi National River and Recreation Area. Interactive National Water Trail Map. https://www.nps.gov/miss/planyourvisit/ptgkeyboatcanoe.htm. Accessed February 2026.

[77] MnDOT. U.S. Bicycle Route 45. https://dot.state.mn.us/bike/mrt-about.html. Accessed February 2026.

control measures be needed during equipment deliveries, the Applicant and their contractors will implement appropriate safety measures such as proper signage, flagging, and traffic control BMPs.

No operational impacts to the shooting range, Mississippi River Trail Bikeway, Star Trail (the snowmobile trail), or nearby recreational resources are anticipated. Potential impacts to the Mississippi River State Water Trail are not anticipated given the Project will not be visible due to distance and existing industrial facilities south of the Project Site. The Project is a permitted use within the Mississippi River Corridor Critical Area.

For these reasons, overall recreation impacts are considered to be minimal.

6.4.10.3 Mitigation Measures

Mitigation measures for recreational resources will focus on minimizing temporary disruptions during construction. Construction activities will be restricted to designated work zones and limited to daytime hours to reduce auditory disturbances and visual disturbances to recreationalists. Construction equipment will employ best management practices, including mufflers and ide-reduction measures, to minimize noise emissions. In addition, the Applicant and their contractors will implement appropriate safety measures such as proper signage, flagging, and traffic control BMPs if equipment deliveries coincide with the snowmobile season resulting in snowmobile trail closures or road closures. If road or snowmobile closures are necessary, the Applicant will coordinate with the snowmobile trail administrator. No additional mitigation measures have been contemplated.

6.4.11 Socioeconomics

6.4.11.1 Existing Environment

Population and Economic Profile

Population and economic profile information was primarily obtained from the DEED 2024 County Profiles[78] and Washington County Community Development Agency.[79] Washington County is within DEED Economic Development Region 11, which is located in the Twin Cities Planning Region.

Washington County is the 5th largest of the 87 counties in the state. Its population has increased so far this decade, ranking it as the 3rd fastest growing county in the state from 2020 to 2024. The population in Washington County increased by 6.1 percent from 2020 to 2024. This increase in population comes from more births than deaths and net in-migration of people – meaning more people moved in than moved out of the county. Washington County's population is expected to grow from 2025 to 2035, with a rate of change that is faster than the projected statewide growth rate (3.7 percent). The population of Cottage Grove is expected to grow by 1.1 percent by 2030.

The cost of living in Washington County has increased over the past 2 years, with costs up in many areas. Washington County had a higher cost of living than the state. Washington County had a higher median

[78] DEED. 2024. Minnesota County Profiles, Washington County. May 23, 2025. https://mn.gov/deed/assets/052725_washington_tcm1045-407445.pdf. Accessed February 2026.

[79] Washington County Community Development Agency. Washington County Profile. https://www.eastmetromsp.org/site-selection/washington-county-profile/p/item/793/cottage-grove. Accessed February 2026.

household income than the state, and a lower percentage of households with incomes below $50,000. Overall, Washington County had the 3rd highest median household income of the 87 counties in the state. The average household income in Cottage Grove is higher than in the county and state and is projected to increase in 2030.

Table 6.4-5 in Section 6.4.5 provides information about percent minority population, and percent of persons in poverty in the county and City of Cottage Grove.

Local Economy and Labor Force

Local economy and labor force data was primarily obtained from the DEED 2024 County Profiles. [80] Other sources are noted where applicable.

In 2024, Washington County had the 6th largest economy of the 87 counties in the state. From 2020 to 2024, employment in the county grew since the pandemic recession. The sectors with the largest number of jobs in Washington County in 2024 were Health Care & Social Assistance (16.4 percent), Retail Trade (15.3 percent), and Manufacturing (12.2 percent). The Construction industry had 4,979 jobs (5.2 percent). Key industries in Cottage Grove include manufacturing (24.2 percent), retail trade (17.7 percent), and educational services (13.5 percent) that account for over half (55.4 percent) of the city's total employment.[81]

Washington County had a lower unemployment rate (2.7 percent) than the state (3.0 percent) in 2024. The county also has a fluctuating labor force participation. Labor force growth has slowed in recent years. After experiencing a net gain of workers each year from 1990 to 2000, Washington County averaged an annual gain of new workers from 2000 to 2010, and most recently a gain of new workers since 2010. Moving forward, Washington County is expected to see a labor force increase from 2025 to 2035.

Approximately 3,730 vacant housing units exist in Washington County and 92 vacant housing units in the City of Cottage Grove. There are numerous temporary housing options in and around the Cottage Grove area including hotels, rental homes, and campgrounds.

Table 6.4-5 provides information on population, unemployment rate, and median household income. Data is provided at the city and county level to characterize the socioeconomic environment in the Region and at the state level for the purpose of comparison.

Table 6.4-5: Socioeconomic Data

Location	Population[1]	Median Household Income	Key Industries[2]	Unemployment Rate	Vacant Housing Units[3]
Minnesota	5,695,292	$87,556	1. Health Care & Social Assistance 2. Manufacturing 3. High Tech Industries	3.0%	237,075

[80] DEED. 2024. Minnesota County Profiles, Washington County. May 23, 2025. https://mn.gov/deed/assets/052725_washington_tcm1045-407445.pdf. Accessed February 2026.

[81] DEED. The City of Cottage Grove Demographic Profile. https://www.cottagegrovemn.gov/DocumentCenter/View/3027/Cottage-Grove-Demographic-Profile?bidId=. Accessed February 2026.

Location	Population[1]	Median Household Income	Key Industries[2]	Unemployment Rate	Vacant Housing Units[3]
Washington County	268,651	$114,457	1. Health Care & Social Assistance 2. Retail Trade 3. Manufacturing	2.7%	3,730
Cottage Grove[4]	39,274	$114,459	1. Manufacturing 2. Retail Trade 3. Educational services	3.0%	92

[1] From Table 6.4-1 in Section 6.4.4.
[2] Source of Key Industries for Minnesota: DEED. Industry Sectors and Detail Industries. Key industries for the State of Minnesota (Excel data). https://mn.gov/deed/data/economic-analysis/compare/compare-minnesota/industries-companies/industry-sectors.jsp. Accessed February 2026.
[3] Source of Vacant Housing Units: ACS 5-Year Estimates Detailed Table B25002 Occupancy Status.
[4] Source of Median Household Income: City of Cottage Grove. Comprehensive Housing Needs Analysis. https://cottagegrovemn.gov/801/Comprehensive-Housing-Needs-Analysis. Accessed February 2026.

6.4.11.2 Potential Impacts

The ROI for socioeconomics is the Region. The Project will provide both short-term and long-term minimal socioeconomic benefits to the local governments and communities. As mentioned in Section 3.5.4 (Construction Workers), the Project will create approximately 150 jobs during the peak construction and installation phases (approximately 12-18 months). Construction of the Project would provide temporary increases to the revenue of the surrounding region through increased demand for food services, fuel, transportation, and general supplies. The Project will also create one to three permanent new jobs and new local job opportunities for various construction trade professionals that live and work in the area, and it is typical to advertise locally to fill required construction positions. 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 labor is expected to be available in Washington County or Minnesota to serve the Project's basic infrastructure and development needs. Specialized labor will be required for certain aspects of the Project. It may be necessary to bring specialized labor from other areas of Minnesota or neighboring states because the relatively short construction duration often precludes special training of local or regional labor. The workforce needed to construct a BESS Facility must be comprised of Minnesota licensed electricians because most of the assembly and wiring work for BESS installations is considered electrical work under the Minnesota State Electrical Code.

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. More permanent housing will be required for the one to two long-term personnel that will manage the Project on a regular basis. The residence and temporary housing statistics suggest the local area has ample amounts of accommodations for influx of construction workers, if needed. The Applicant anticipates that sufficient temporary lodging and permanent housing will be available within Washington County to accommodate construction laborers and long-term personnel.

The Applicant will pay wages, and purchase goods and services from local businesses and landowners during the Project's construction and operation. The Project will provide approximately $3.8 million in revenue to the City of Cottage Grove and Washington County from property taxes over the 25-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.

The Applicant will hire construction craft workers under a collective bargaining agreement with unions affiliated with the North America's Building Trades Unions. If such workers are unavailable for certain work, the Applicant will meet in good faith with the local building trades council and may enter into a site-specific building trades collective bargaining agreement to cover that work.

For these reasons, the overall socioeconomics impacts are expected to be negligible and positive.

6.4.11.3 Mitigation Measures

Socioeconomic impacts are anticipated to be beneficial. The Sample Site Permit standard conditions require quarterly reports detailing efforts to hire Minnesota workers and the permittee, as well as its construction contractors and subcontractors, to pay no less than the prevailing wage rate (Appendix K).

6.4.12 Property Values

Property values are influenced by multiple factors, including parcel specifics, neighborhood characteristics, and market trends. While landowners may have personal assessments of their property's value before and after BESS projects, these do not necessarily impact market value. Professional appraisers evaluate properties based on current conditions, independent of previous states.

Electrical generating facilities can impact property values. Often, negative effects result from impacts that extend beyond the project location. Examples include emissions, noise, and visual impacts. Unlike fossil-fueled electric generating facilities, the project would not generate emissions during operation. Potential impacts from operational noise are possible and are discussed in more detail in Section 6.4.7. Aesthetic impacts may occur, but impacts are reduced since the Project is sited in an existing industrial facility.

6.4.12.1 Existing Environment

Impacts to property values can be measured in three ways: sale price, sales volume, and marketing time. These measures are influenced by a complex interaction of factors. Many of these factors are parcel specific, and can include condition, size, acreage, improvements, and neighborhood characteristics; the proximity to schools, parks, and other amenities; and the presence of existing infrastructure, for example, highways or transmission lines. In addition to property-specific factors, local and national market trends, as well as interest rates, can affect all three measures. The presence of an energy storage facility becomes one of many interacting factors that could affect a specific property's value.

Because each landowner has a unique relationship and sense of value associated with their property a landowner's assessment of potential impacts to their property's value is often a deeply personal comparison of the property "before" and "after" a proposed project is constructed. The landowner's judgments, however, do not necessarily influence the market value of a property. Professional property appraisers assess a property's value by looking at the property "after" a project is constructed. Moreover, potential

market participants are likely to see the property independent of the changes brought about by a project; therefore, they do not take the "before" and "after" into account the same way a current landowner might. MPUC EIP staff acknowledge this section does not and cannot consider or address the fear and anxiety felt by landowners when facing the potential for negative impacts to their property's value.[82]

6.4.12.2 Potential Impacts

The ROI for property values is the Project Vicinity. A recent study suggests that utility-scale BESS projects do not measurably affect nearby residential property values. A 2025 University of Pennsylvania study examining 178 BESS facilities across California, Massachusetts, and New York found no statistically significant difference in home sale prices within 0.75 mile of operational projects compared with homes farther away. The analysis ruled out any average price decrease larger than 1.1 percent or increase larger than 1.3 percent. The author attributes the negligible effect to limited public visibility of BESS installations, the rarity of fire incidents, and the offsetting nature of positive (grid stability, clean-energy integration) and negative (perceived safety) externalities. Overall, the study concludes that utility-scale BESS facilities have a neutral impact on surrounding property values.[83]

6.4.12.3 Mitigation Measures

To the extent that negative impacts could occur they are expected to decrease with distance from the Project. Aesthetic and noise impacts that might affect property values would be limited to residences and parcels in the Project vicinity where the facility may be visible. The Project is located in an industrial area with existing vertical structures within view of nearby residences. There are no homes within the Project Vicinity, the nearest homes are located approximately 2,500 feet or more from the Project Site and are separated from the Project Site by U.S. Highway 10/61 and scattered trees.

Negative impacts on property values are not anticipated, and mitigation measures are not proposed.

6.5 Land-based Economies

6.5.1 Agriculture

6.5.1.1 Existing Environment

According to the U.S. Department of Agriculture's (USDA's) 2022 Census of Agriculture,[84] approximately 50,806 acres of land in Washington County is comprised of farms, including 36,745 acres of cropland (72.3 percent), 4,894 acres of pastureland (9.6 percent), and 4,280 acres of woodland (8.4 percent). A total of 525 individual farms are located in Washington County, with the average farm size at 97 acres.

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82 Department of Commerce. 2022. Rights-of-way and Easements for Energy Facility Construction and Operation. https://apps.commerce.state.mn.us/eera/web/project-file/12227. Accessed January 2026.

83 Gwee, Yixin. 2025. The Impact of Utility-Scale Battery Energy Storage System Projects on Property Values in California, Massachusetts, and New York. Master's thesis, The Wharton School, University of Pennsylvania. https://repository.upenn.edu/entities/publication/985ee8b2-3228-4a70-8f6e-0a92d757fc82. Accessed February 2026.

84 USDA. 2022. Census of Agriculture. Washington County Profile. https://www.nass.usda.gov/Publications/AgCensus/2022/Online_Resources/County_Profiles/Minnesota/cp27163.pdf. Accessed December 2025.

Washington County ranks 69th in the state for total agricultural production and 67th in crop production. In 2022, the top three crops (in acres) in Washington County included corn (for grain), soybeans (for beans), and forage (hay and haylage). Cattle and calves topped the list of livestock inventory, followed by horses and ponies, and layers. The total market value of agricultural products sold in Washington County was approximately $60 million, including $55 million for crops and $6 million for livestock, poultry, and products.

Based on historical aerial imagery, the site had been in agricultural production since at least 1945.[85] Construction of the LSP Cottage Grove Cogeneration Facility began in July 1995. No agricultural drain tile was identified during the underground utility investigation.

The Project does not require an Agricultural Impact Mitigation Plan because no agricultural land will be permanently converted by construction or operation of the Project. The Project is located entirely on previously developed or non-agricultural land within the existing LSP Cottage Grove Cogeneration Facility and does not include any active cropland, pasture, or land enrolled in agricultural preservation programs.

6.5.1.2 Potential Impacts

The ROI for agriculture is the Project Site. There are no agricultural lands within the Project Site. The Project will be constructed within the existing LSP Cottage Grove Cogeneration Facility. While agricultural fields are located adjacent to and near the Project Site, they are in the Heavy Industrial I-2 zoning district and considered interim uses. No agricultural land will be impacted by the construction or operation of the Project. Impacts are considered to be negligible.

6.5.1.3 Mitigation Measures

Because no impacts to agricultural uses are anticipated, no mitigation measures are proposed.

6.5.2 Forestry

6.5.2.1 Existing Environment

The Project is located on industrial land and adjacent to interim use agricultural lands in an area zoned for Heavy Industrial uses. Tree cover within the Project Site consists of small stands and individual trees.

6.5.2.2 Potential Impacts

The ROI for forestry is the Project Site. Economically significant forestry resources will not be impacted from construction or operation of the Project.

6.5.2.3 Mitigation Measures

Impacts to forestry are not anticipated; therefore, no mitigation is proposed.

[85] University of Minnesota. 2015. Minnesota Historical Aerial Photographs Online. John R. Borchert Map Library. https://apps.lib.umn.edu/mhapo/. Accessed February 2026.

6.5.3 Mining

Construction of the Project will require the use of sand and aggregate for backfill and access roads. The demand for sand and gravel will be temporary and is not expected to require new or expanded sand or aggregate operations.

6.5.3.1 Existing Environment

According to the MnDOT Aggregate Source Information System Map, there are no quarries or gravel pits located within or adjacent to the Project Site. One inactive aggregate source is located approximately 0.3 mile southeast of the Project Site. A Commercial Aggregate source is located approximately 1.2 miles west of the Project Site, as well as a Rock Quarry located approximately 2.3 miles south of the Project Site across the Mississippi River. Regional mining is minimal, with only a few small mines or pits associated with aggregate extraction or storage.[86]

6.5.3.2 Potential Impacts

The ROI for mining is the Project Site. No impacts to mining operations are anticipated.

6.5.3.3 Mitigation Measures

No mitigation measures are proposed.

6.5.4 Tourism

Tourism destinations in the Project Area are related to outdoor recreational activities and local festivals and events.

6.5.4.1 Existing Environment

No tourism or recreational opportunities exist within the Project Site. Regional tourism consists of various festivals and activities hosted by counties and cities. Recreational opportunities are described in Section 6.4.10.

Washington County has eight parks, three regional trails, one conservation area, and the Historic Courthouse site located within cities and in rural areas that provide opportunities for archery, equestrian trails, controlled hunting, camping, swimming, picnicking and grilling, playgrounds, fishing, boating, biking and hiking, water activities such as canoeing and kayaking, cross country ski trails, snowmobile trails, snowshoe and ski rentals. The county lists the camping season for 2026 from April 24 through October 17.[87]

In 2023, Washington County generated approximately $800 million in gross sales and employed 12,148

[86] MnDOT. 2023. Aggregate Source Information System. KMZ. https://www.dot.state.mn.us/materials/asis_GE.html. Accessed January 2026.

[87] Washington County. Parks & Recreation. https://www.washingtoncountymn.gov/492/Parks. Accessed January 2026.

individuals in the leisure and hospitality industry.[88]

6.5.4.2 Potential Impacts

The ROI for tourism is the Project Site. Project facilities will be located on private land, and with no tourist destinations within or adjacent to the Project. There will be no direct impacts to existing recreational facilities and tourism activities that typically generate revenue for the local community.

The Applicant will construct the Project facilities within the limits of the Project Site, and no long-term road closures are anticipated during active construction. The Applicant will closely coordinate construction activities with the city and county if any road or snowmobile trail closures are determined necessary. Recreation opportunities in the nearby area will be minimally affected by the construction of the Project and will not be impacted by Project operation. The annual events hosted by the county do not occur within the Project Site. No impacts to public access to these events is anticipated during construction or operation of the Project. Noise effects on public events are also not anticipated to result from the proposed Project.

Impacts related to tourism are not anticipated and are considered to be negligible.

6.5.4.3 Mitigation Measures

Because no impacts to tourism are anticipated, no mitigation measures are proposed.

6.6 Archaeological and Historic Resources

Archeological resources are locations where objects or other evidence of archaeological interest exist, and can include aboriginal mounds and earthworks, ancient burial grounds, prehistoric ruins, or historical remains. Historic resources are sites, buildings, structures, or other antiquities of state or national significance.

6.6.1 Existing Environment

The Applicant has evaluated potential Project effects on archaeological and historical resources using desktop review, file searches, and field surveys. A field reconnaissance for the Project Site was completed on October 9, 2025. Additionally, the Applicant engaged cultural resource regulatory and tribal stakeholders to introduce the Project, request comments, and gain feedback. See Section 1.5 and Appendix D and Appendix E for agency and tribal coordination. The Applicant sent a Project introduction letter and map to the Minnesota Tribal Nations requesting feedback on the Project. See Section 1.5 for details and responses.

Phase I Archaeological Reconnaissance Survey

Westwood, on behalf of the Applicant, performed a review of records for cultural resources on November 24, 2025, and this review is provided as Appendix M. This report included reviews MnSHIP data from the SHPO, a review of the online portal maintained by the Office of the State Archaeologist, and reviews of

[88] Explore Minnesota. 2023 Leisure & Hospitality Industry Data. https://mn.gov/tourism-industry/assets/2023%20MN%20L%26H%20Data_tcm1135-665060.pdf. Accessed January 2026.

historical aerial imagery. The records review study area included the Project Site and a one-mile buffer.

A review of archaeological data indicated that no previously recorded archaeological sites had been identified in the Project Site. The review identified 18 previously recorded archaeological sites within the one-mile buffer, with one of the resources being the St. Paul and Chicago Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company, River Division Railroad Corridor Historic District. No historic/architectural resources were previously recorded in the Project Site (Table 6.6-1). One of the resources is listed as Eligible by the National Register of Historic Places (NRHP), four are listed as Not Eligible, and the remaining 13 resources are Unevaluated. No NRHP properties were identified in the Project Site according to a review of the NRHP dataset.

Table 6.6-1: Historic/Architectural Resources

SHPO ID	Resource Name	Property Type	Address	NRHP Status	Proximity Project
XX-RRD-CSP044	St. Paul and Chicago Railway Company/Chicago Milwaukee and St. Paul Railway Company/Chicago Milwaukee St. Paul and Pacific Railroad Company, River Division Railroad Corridor Historic District	District	RR ROW between Union Depot in St. Paul and Mississ. Riv. Crossing near La Crescent	Eligible	Buffer/ Adjacent
XX-ROD-00040	Trunk Highway 10	Structure	TH10	Unevaluated	Buffer
XX-ROD-00006 XX-ROD-00009	Trunk Highway 61 (Formerly TH 1 and 3)	Structure	TH61	Not Eligible	Buffer
WACGC-00210	Point Douglas Road – Cottage Grove Segment	Structure	Point Douglas Road	Unevaluated	Buffer
WA-CGC-00212	Chicago Burlington & Quincy Railroad Line	Structure		Not Eligible	Buffer
WA-CGC-00211	Chicago Milwaukee St. Paul & Pacific Railroad Line	Structure		Unevaluated	Buffer
WA-CGC-00214	Glacial River Channel	Site	Off U.S. Hwy. 10	Unevaluated	Buffer
WA-CGC-00154	Larson House	Building	9747 Miller Road	Unevaluated	Buffer
WA-CGC-00174	Smallidge Farmstead (razed)	Building	10051 Miller Road	Unevaluated	Buffer
WA-CGC-00229	Cottage View Drive-In	Building	9338 Point Douglas Road East	Not Eligible	Buffer
WA-CGC-00019	3M Chemolite Plant	Building	xxx Chemolite Rd.	Unevaluated	Buffer
WA-CGC-00155	Kemp Farmstead	Building	9430 Point Douglas Road	Unevaluated	Buffer
WA-CGC-00156	Pommerening Barn	Building	9826 Point Douglas Rd.	Unevaluated	Buffer

SHPO ID	Resource Name	Property Type	Address	NRHP Status	Proximity Project
WA-CGC-00064	James Sheridan Barn (razed)	Building	9866 Kimbro Avenue South	Unevaluated	Buffer
WA-CGC-00159	Eckdahl House	Building	10581 E. Point Douglas Road	Unevaluated	Buffer
WA-CGC-00225	Point Douglas Road Wayside Rest Area	Structure	East Point Douglas Road	Unevaluated	Buffer
WA-CGC-00158	Hale Barn	Building	10532 East Point Douglas Road	Unevaluated	Buffer
WA-CGC-00237	Bridge 9071	Structure	CSAH 19 3.1 mi NW of Jct. TH 95	Not Eligible	Buffer

The Project Site is located in Minnesota Archaeological Region 4E – Central Lakes Deciduous East. Prehistoric camp sites in this region are generally located near lakes, rivers, and other water sources with resource procurement sites located anywhere the resource could be found. Early and Early Middle Prehistoric site location patterns are not well known, but by the Late Middle Prehistoric large village sites were found on major lakes, with smaller campsites found along major rivers and large lakes. By the Late Prehistoric Period, much of the region was only used for resource procurement with villages generally near wild rice beds.[89]

Phase I Field Survey

The SHPO recommended an archaeological survey in a letter dated December 26, 2025. Archaeological field surveys for the Project Site were conducted on October 9, 2025, and are detailed in the March 13, 2026 *Phase I Archaeological Reconnaissance Survey* (Appendix M). No new or previously recorded archaeological, architectural, or historic sites were identified/reviewed during the survey.

6.6.2 Potential Impacts

The ROI for archaeological and historic resources is the Project Area. No previously recorded archaeological, architectural, or historic sites will be directly impacted by the proposed Project, and there are no known properties listed in the National or State Registers of Historic Places in the Project Site.

Impacts to archaeological and historic resources are not anticipated, and no mitigation measures are proposed.

6.6.3 Mitigation Measures

Before construction of the Project begins, the Applicant will prepare an Unanticipated Discoveries Plan that will outline the steps to be taken if previously unrecorded cultural resources or human remains are encountered during construction. Should previously unknown archaeological resources be inadvertently encountered during Project construction and/or operation, work will stop, and the discovery will be

[89] Scott Anfinson.1990. Archaeological Regions in Minnesota and the Woodland Period. The Woodland Tradition in the Western Great Lakes, Edited by G. Gibbon," *University of Minnesota Publications in Anthropology* 4 (1990): 135–66; Guy E. Gibbon et al., Chapter 3: Minnesota's Environment and Native American Culture History. In Mn/Model Final Report Phases 1-3, Minnesota Department of Transportation," SHPO, 2002, https://www.dot.state.mn.us/mnmodel/P3FinalReport/chapter3.html

examined by an archaeologist. If the discovery is determined to be a significant cultural resource, SHPO, the Office of the State Archaeologist, and the Leech Lake Band of Ojibwe will be notified. Should human remains be inadvertently discovered, The Applicant will cease all work, law enforcement will be immediately contacted, and the Office of the State Archaeologist will be notified.

6.7 Natural Resources

Large energy projects can impact the natural environment. Impacts are dependent upon many factors, such as how the project is designed, constructed, maintained, and decommissioned. Other factors, such as the environmental setting, influence potential impacts.

6.7.1 Air Quality

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), ozone, and lead. According to the MPCA's The Air We Breathe: The State of Minnesota's Air Quality 2025 report, the largest contributors to air-pollution risk in the state continues to be transportation (such as vehicle traffic, aircraft, trains and watercraft), emissions from industrial and permitted facilities, and residential wood burning for heat and recreation.[90]

Fugitive Dust

Adverse effects on the surrounding environment are expected to be negligible because of the short and intermittent nature of the emission and dust-producing construction phases. 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).

Projects Requiring an Air Permit

The Project will not exceed MPCA air quality thresholds and will not require an Air Permit for construction or operation of the BESS Facility.

6.7.1.1 Existing Environment

Minnesota has a good record of complying with federal air quality standards, and the state's air quality has been improving for most pollutants. Currently all areas of Minnesota are attainment areas except for an area in Dakota County.[91] 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

[90] MPCA. 2025. The Air We Breathe Report | Minnesota Pollution Control Agency. https://www.pca.state.mn.us/air-water-land-climate/the-air-we-breathe-report

[91] EPA. 2025. Minnesota Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/anayo_mn.html

carbon monoxide (CO), lead, nitrogen dioxide (NO_2), ozone (O_3), PM, and sulfur dioxide (SO_2). The Project Site presently meets federal air quality standards.[92]

Air quality in Minnesota is monitored through a network of air quality monitoring stations operated by the MPCA.[93] Data collected from these stations is used to calculate the Air Quality Index (AQI), on an hourly basis, for O_3, PM2.5, SO_2, NO_2, and CO. The pollutant with the highest AQI value determines the overall AQI for that hour. 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.[94]

The nearest air quality monitoring station is in St. Paul Park, Minnesota, approximately six miles northwest of the Project. This station monitors SO_2, total reduced sulfur, volatile organic compounds, and Carbonyls. The five most recent annual AQI Days in each category in Washington County are provided in Table 6.7-1.[95]

Table 6.7-1: Number of Days in Air Quality Index Groups in Washington County, MN

Year	Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy	Very Unhealthy
2025	193	12	0	0	0
2024	241	5	0	0	0
2023	194	38	8	0	0
2022	212	15	0	0	0
2021	205	21	1	0	0

Air quality has been considered good for the majority of the past five reported years in Washington County. No unhealthy or Very Unhealthy days have been recorded in Washington County over the last 5 years. The uptick of days in the Unhealthy for Sensitive Groups category in 2023 can be explained by the wildfire smoke that year. Health advisories were put in place due to the visible haze and air quality. No days have been classified as unhealthy or very unhealthy in the past five years (2018–2022) of monitoring at the Rochester station.

6.7.1.2 Potential Impacts

The ROI for air quality is the Region. Impacts on air quality from construction and operation of the Project would be low and primarily limited to the period of construction. Minor temporary effects on air quality are anticipated during construction of the proposed Project as a result of exhaust emissions from

[92] MPCA. 2024. Minnesota Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/anayo_mn.html

[93] MPCA. Air Monitoring – Active Statewide Monitoring Sites. https://data.pca.state.mn.us/views/Airmonitoring-Activestatewidemonitoringsites/Monitoringlocationmapandtable?%3Aembed=y&%3AisGuestRedirectFromVizportal=y. Accessed January 2026.

[94] MPCA. 2025. Understanding the Air Quality Index (AQI). https://www.pca.state.mn.us/air-water-land-climate/understanding-the-air-quality-index-aqi. Accessed February 2026.

[95] U.S. EPA. 2025. "Air Quality Index Report." Data and Tools. https://www.epa.gov/outdoor-air-quality-data/air-quality-index-report

construction equipment and other vehicles, and from fugitive dust from wind erosion of temporarily exposed soils that becomes airborne during dry periods of construction activity (e.g., grading activities).

The magnitude of air emissions during construction is influenced by weather conditions and the type of construction activity. 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 (CO_2), Refer to Section 6.8 and Appendix N for more information on construction and operation GHG emissions estimates.

6.7.1.3 Mitigation Measures

Applicable BMPs will be used during construction and operation of the Project to minimize dust emissions. While the final methods and need for dust control will be determined closer to Project construction, the Applicant will use non-chloride products. Additional BMPs will be implemented as part of the SWPPP 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 Applicant will obtain an NPDES/SDS CSW General Permit and prepare the required SWPPP, which will be developed prior to construction and implemented during construction, that will include BMPs to minimize to potential for fugitive dust.

6.7.2 Geology and Groundwater

The Applicant reviewed soils, underlying geologic bedrock formations, groundwater, and other hydrogeologic resource features of the Project Site. Sources included:

- USDA Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) soils of Washington County,[96]
- Minnesota Well Index,[97]
- Karst Feature Mapping of Minnesota,[98]
- U.S. Geological Survey (USGS) Topographic Mapping,
- Washington County Soil Survey,[99] and
- Washington County Geologic Atlas;[100]

[96] Soil Survey Staff, USDA NRCS. 2019. Web Soil Survey, Washington County, Minnesota. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 2026.

[97] MDH. 2024. Minnesota Well Index. Version 2.1.2. https://mnwellindex.web.health.state.mn.us/. Accessed January 2026.

[98] DNR. Karst Feature Inventory: Karst Features in Minnesota. Updated April 14, 2024. https://arcgis.dnr.state.mn.us/portal/apps/webappviewer/index.html?id=9df792d8f86546f2aafc98b3e31adb62. Accessed February 2026.

[99] Soil Survey Staff, USDA NRCS. 2019. Web Soil Survey, Washington County, Minnesota. https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx. Accessed February 2026.

[100] Minnesota Geological Survey. 2020. County Geological Atlas – Washington County Atlas, C-49, Part A – Geology. University of Minnesota. https://cse.umn.edu/mgs/county-geologic-atlas#CGA-Map-Data-Library. Accessed December 2025.

6.7.2.1 Existing Environment

Geology

According to the County Geologic Atlas for Washington County, Minnesota,[101] Washington County's present land surface is the result of the actions of glacial ice and its flowing meltwaters. Surface materials are primarily glacial drift deposits. These deposits are composed mostly of glacial till, characterized by a matrix of sand, gravel, sandy loam to silt loam, with scattered inclusions ranging from pebbles to boulders.

The thickest Quaternary sediments in Washington County are within the Mississippi and St. Croix River valleys and their tributaries, where the depth to bedrock can be as much as 400 feet. Bedrock is at or within 25 feet of the land surface over the majority of the county. Within the Project Site, deposits over bedrock surfaces range in depth from less than 10 feet to 50 feet deep. The bedrock underlying this glacial drift is Lower Ordovician sedimentary rock consisting of dolostone and sandstone. Bedrock in the county was deposited by advancing ice sheets and later developed through faults and folding with further subsequent glacial deposition. The Minnesota Geological Survey Depth to Bedrock mapping indicates bedrock depths of 0 to 50 feet below ground level in the Project Site.[102]

Karst features are formed primarily of limestone, make the topography "porous," and make the area's water resources more challenging to protect.[103] Contaminants can quickly find routes from the surface into groundwater. Petroleum and other chemicals leaking from underground storage tanks can quickly move into groundwater. Spilled manure in the Project region can cause fish kills many miles from the release point. Chemicals used on the landscape can reappear at unexpected times and in unexpected locations.

No known karst features are within the proposed Project Site. The nearest karst feature (a sinkhole) is about 1.3 miles north of the Project Site in a residential neighborhood in Cottage Grove.[104]

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 closest to the land surface are often impacted by human activities. This province and region have good 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.

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101 Minnesota Geological Survey. 2020. County Geological Atlas – Washington County Atlas, C-49, Part A – Geology. University of Minnesota. https://cse.umn.edu/mgs/county-geologic-atlas#CGA-Map-Data-Library. Accessed December 2025.

102 Minnesota Geological Survey. 2020. County Geological Atlas – Washington County Atlas, C-49, Part A – Geology. University of Minnesota. https://cse.umn.edu/mgs/county-geologic-atlas#CGA-Map-Data-Library. Accessed December 2025.

103 MPCA. 2021b. Karst in Minnesota. https://www.pca.state.mn.us/water/karst-minnesota#:~:text=A%20feature%20of%20karst%20geography,and%20dramatic%20bluffs%20and%20valleys. Accessed December 2025.

104 DNR. 2026. Karst Features Inventory. Shapefile. Updated February 12, 2026. https://gisdata.mn.gov/dataset/geos-karst-feature-inventory-pts. Accessed February 2026.

According to the County Geologic Atlas for Washington County, Minnesota,[105] Washington County's present land surface is the result of the actions of glacial ice and its flowing meltwaters. The main aquifer in Washington County is the Cambrian-Ordovician aquifer system. Based on information from the USGS Ground Water Atlas,[106] 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. Depth to the water table within the site ranges from 30 feet to over 50 feet, with an average depth of 40 to 50 feet to the water table.[107]

The Minnesota Well Index Data indicates that the wells in the Project Area draw from the Prairie du Chien and Jordan aquifers.[108]

Under the federal Safe Drinking Water Act each state is required to develop and implement a Wellhead Protection Program to identify the land and recharge areas contributing to public supply wells and prevent the contamination of drinking water supplies. The act was updated in 1986 with an amendment requiring the development of a broader-based Source Water Assessment Program, which includes the assessment of potential contamination to both groundwater and surface water through a watershed approach. A Wellhead Protection Area (WHPA) encompasses the area around a drinking water well where contaminants could enter and pollute the well.

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. The Project Site is not located within a WHPA or Drinking Water Supply Management Area (DWSMA). The nearest WHPA and DWSMA are located about one mile north of the Project Site.[109] There are no designated sole source aquifers in the Project Vicinity.[110]

The MDH uses a vulnerability rating method in which points are assigned for conditions that represent a perceived risk to a well.[111] The evaluation includes each of the criteria noted below, where such information is available. Vulnerability assessments 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 Cottage Grove DWSMA

105 University of Minnesota. 2020. County Geological Atlas – Washington County Atlas, C-49, Part A – Geology. Minnesota Geological Society. https://cse.umn.edu/mgs/county-geologic-atlas#CGA-Map-Data-Library. Accessed December 2025.

106 USGS. 2000. Ground Water Atlas of the United States. Hydrologic Atlas 730. https://doi.org/10.3133/ha730.

107 DNR. 2015. Water Table – Depth. https://mnatlas.org/gis-tool/?id=k_0279. Accessed February 2026.

108 MDH. 2026. Minnesota Well Index. Version 2.2.5. https://mnwellindex.web.health.state.mn.us/. Accessed February 2026.

109 MDH. Source Water Protection Web Map Viewer. https://experience.arcgis.com/experience/14825b159b2e4dc686736d98e39ebce7. Accessed February 2026.

110 EPA. Sole Surface Aquifers Viewer. https://experience.arcgis.com/experience/1bfab371d71e4b868fc9ae7df62a16fe. Accessed February 2026.

111 MDH. 2018. Wellhead Protection Vulnerability Fact Sheet. April 9, 2018. https://www.health.state.mn.us/communities/environment/water/docs/swp/vulnerability.pdf.

has a DWSMA vulnerability rating of high.[112]

There are six wells within the Project Vicinity.[113] Table 6.7-2 summarizes wells within the Project Vicinity.

Table 6.7-2: MDH Wells within the Project Vicinity

Unique Well ID	Well Name	Well Elevation (feet/msl)	Well Depth (feet)	Depth to Bedrock (feet)	Well Installation Date	Well Use/Status
231872	N.S.P. Chemolite (Project Site)	798	200	31	2/13/1967	Industrial/Active
424131	3M Chemolite	799	208	42	8/28/1986	Domestic/Sealed
233568	3M Chemolite OB. No.2	802	192	39	Unknown	Observation Well/Active
233576	3M Chemolite No.7 (Shooting Range)	825	200	10	6/12/1989	Industrial/Active
233573	3M Chemolite OB. No.7	791	146	38	6/13/1989	Observation Well/Active
233569	3M Chemolite OB. No.3	807	210	55	6/13/1989	Observation Well/Active

6.7.2.2 Potential Impacts

Geology

The ROI for geology is the Project Site. As mentioned above, depth to bedrock ranges from 0 to 50 feet below ground level in the Project Site. Constructing a gravel foundation on shallow bedrock involves careful preparation to ensure structural stability and proper drainage. The process begins by clearing the Preliminary Development Area 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 conditions encountered 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 Project Site. Based on the well logs for the 6 wells within the Project Vicinity, depth to bedrock was encountered between 10 and 55 feet.

No karst features have been identified within the Project Site and are not anticipated to be a concern for the Project.

The Applicant will complete geotechnical soil borings as preliminary Project design and engineering advances; this information will be assessed for potential impacts to geologic resources.

[112] MDH. Source Water Protection Web Map Viewer. https://experience.arcgis.com/experience/14825b159b2e4dc686736d98e39ebce7. Accessed February 2026.

[113] MDH. Environmental Health Division - Source Water Protection Unit. 2022. Well Information from County Well Index for the General Public. Shapefile. https://gisdata.mn.gov/dataset/water-well-information-non-pws. Accessed February 2026.

Groundwater

The ROI for groundwater is the Project Vicinity. Grading and construction work to be performed for the Project will involve soils in the upper 10 to 20 feet of the surface. Therefore, impacts to groundwater resources, both at the Project Site and surrounding areas, are not anticipated. The Applicant will complete additional geotechnical studies closer to the construction date to further inform the Project's design, engineering, and construction techniques. There are no WHPAs, DWSMAs, or sole source aquifers in the Project Vicinity.

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. If, during construction, dewatering exceeds withdrawal of more than 10,000 gallons of water per day or one million gallons per year, the Applicant will obtain a Water Appropriation Permit from DNR.

Preliminary design indicates that Project facilities will be located at least 1,000 feet from the nearest water well. No impacts to this well are expected. If the well will be impacted, the Applicant will coordinate with the underlying landowner, and facilitate capping, if necessary and approved by the underlying landowner, in accordance with MDH requirements.

Impacts to groundwater resources (including aquifers) are not anticipated during operation of the Project as water supply needs will be limited. Potable water for facility personnel and O&M uses is anticipated to be provided through use of an existing well that provides water supply to the LSP Cottage Grove Cogeneration Facility.

The BESS foundations will consist of approximately ¾-inch aggregate pads installed at an estimated depth of one to three feet below ground surface, depending on localized soil conditions. Trenching for the underground feeder system may temporarily encounter shallow groundwater/moisture-bearing zones, typically occurring at depths of 20 to 30 feet below grade, but is not expected to reach or influence regional groundwater flow or aquifer systems. The static water level recorded for Well Log 233569 (1,300 feet southwest of the Project Site) was 123 feet from the land surface. Excavation depths for electrical conduits are anticipated to remain well above the static water levels, thereby minimizing the potential for dewatering, infiltration, or groundwater contamination. Prior to construction, the Applicant will conduct geotechnical borings and subsurface investigations in proposed trenching areas to confirm site-specific groundwater elevations and verify that no aquifer impacts are anticipated.

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 BESS enclosure washing activities. The BESS enclosures 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 BESS enclosures to control insects, and any use would also follow applicable requirements.

A SPCC Plan is required for the Project Substation MPT. The Applicant will design, construct, and operate the transformer in accordance with the SPCC Plan and applicable EPA and MPCA requirements and ensure

the required secondary containment is used to contain any potential spills or leaks of transformer oil or other fluids to prevent impacting the groundwater.

For these reasons, overall geology and groundwater impacts are considered to be minimal to moderate depending on if excavation of bedrock is required.

6.7.2.3 Mitigation Measures

Stormwater management is important to ensure that BESS components maintain their integrity and that rainwater and surface runoff drain away from the Project components in a way that does not adversely affect existing drainage systems, roads, or nearby properties. Appropriate permanent stormwater management measures, including minimizing the area of impervious surfaces at the Project site to reduce the volume and velocity of the stormwater runoff and the establishment of multiple stormwater ponds, will address drainage from the newly established impervious areas. Geotechnical soil testing will determine final installation process for the foundation structures.

Because the Project will disturb more than one acre, a NPDES/SDS CSW General Permit is required from the MPCA. The NPDES/SDS CSW General Permit will identify BMPs for erosion prevention and sediment control. As part of the NPDES/SDS CSW General Permit, the Applicant will develop a SWPPP that describes construction activity, temporary and permanent erosion and sediment controls, BMPs, permanent stormwater management to be implemented during construction and throughout the life of the Project. Potential erosion control BMPs include wildlife-friendly options such as stabilizing slopes, bio-netting, controlling vehicle tracking, use of chloride free materials, and prompt planting post-construction. These BMPs will be finalized prior to construction and with the SWPPP. Implementation of the protocols outlined in the SWPPP will minimize the potential for soil erosion and detail stormwater management methods during construction and operation of the Project.

The Applicant will install secondary containment for the Project Substation's MPT to contain any potential spills or leaks of transformer oil or other fluids and prevent impacting the groundwater. The SWPPP prepared for the Project will include the design for the secondary containment for the MPT and for any oil filled operational equipment, such as the inverter/transformer within BESS units. Depending on final design and the size of any storage tanks, the EPA may require a spill prevention, containment, and countermeasures plan for Project construction and possibly for the operation phase.

The Applicant will complete geotechnical soil boring studies to determine if excavation of bedrock will be necessary. If bedrock excavation is necessary, the Applicant will prepare a bedrock excavation plan and will provide the plan to the MPUC for review. Additional mitigation measures will be provided if determined necessary following the geotechnical soil borings.

6.7.3 Soils

6.7.3.1 Existing Environment

Soil characteristics within the Project Site were accessed using the NRCS SSURGO database.[114] The soils

[114] Soil Survey Staff, USDA NRCS. 2025. Web Soil Survey, Washington County, Minnesota. Spatial Version 7, September 10, 2025.https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

within the Project Site are typically sandy loam soils with a small amount of loamy sand, as indicated in Table 6.7-3 (Map 10)**.** The Project Site has flat topography, with slopes less than one percent, which is consistent with the current developed, industrial use. Soils within the site are classified as either excessively drained or somewhat excessively drained.

Table 6.7-3: Soil Types within the Project Site

Map Unit Symbol	Map unit name	Farmland Classification	Hydric Rating[1]	Drainage Class	Acres
327	Dickman Sandy loam, 0%-2% slopes	Farmland of statewide importance	Non-Hydric	Somewhat excessively drained	5.3
8B	Sparta Loamy Sand, 2%-6% slopes	Not prime farmland	Non-Hydric	Excessively drained	1.6
				TOTAL	**6.8[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).

2 Sum of the soils is equal to 6.8 acres. Rounding errors achieve an acreage of 6.9 acres.

6.7.3.2 Potential Impacts

The ROI for soils is the Project Site. Impacts to soils will occur during construction and decommissioning of the Project. The impact intensity level is expected to be low. Primary impacts to soils include compaction from construction equipment, soil profile mixing during grading and pole auguring, rutting from tire traffic, and soil erosion. Impacts to soils are likely to be greatest with the belowground electrical collection system. Potentials impacts will be positive and negative, and short and long term. Isolated moderate to significant negative impacts associated with high rainfall events could occur.

Some soil compaction may result from the installation of the foundations for the BESS pads. Soil compaction will be mitigated by use of low-impact equipment and methods, regrading, and tilling these areas following construction.


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327
8B
327
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Data Source(s): Westwood (2026); NAIP (2025); NRCS (Accessed 2026).
N
0
125 Feet
Cottage Grove BESS Project
City of Cottage Grove, Washington County, Minnesota
Soils
Map 10
Legend
Project Site
Soil Unit Boundary
Westwood
Toll Free (888) 937-5150 westwoodps.com

Map 10: Soils

6.7.3.3 Mitigation Measures

The Project will disturb over one acre and will therefore require coverage under the NPDES/SDS CSW General Permit and the preparation of a SWPPP will be required. The SWPPP will be implemented during construction activities and will include BMPs, such as silt fencing (or other erosion control devices), revegetation plans, 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. Implementation of BMPs within the Preliminary VMP such as prompt planting after construction and maintenance of vegetation over the Project life will mitigate impacts to soils.

Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. 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 stormwater ponds in accordance with MPCA regulations to collect and treat runoff from the Project during its operation (Appendix G). All areas disturbed during construction of the Project will be returned to pre-construction conditions.

6.7.4 Surface Waters (including stormwater, floodplains, and wetlands)

BESS projects have the potential to impact surface water resources and floodplains. These projects could directly impact water resources and floodplains if these features cannot be avoided through project design. Projects also have the potential to adversely impact surface waters through construction activities which move, remove, or otherwise handle vegetative cover and soils. Changes in vegetative cover and soils can change runoff and water flow patterns.

6.7.4.1 Existing Environment

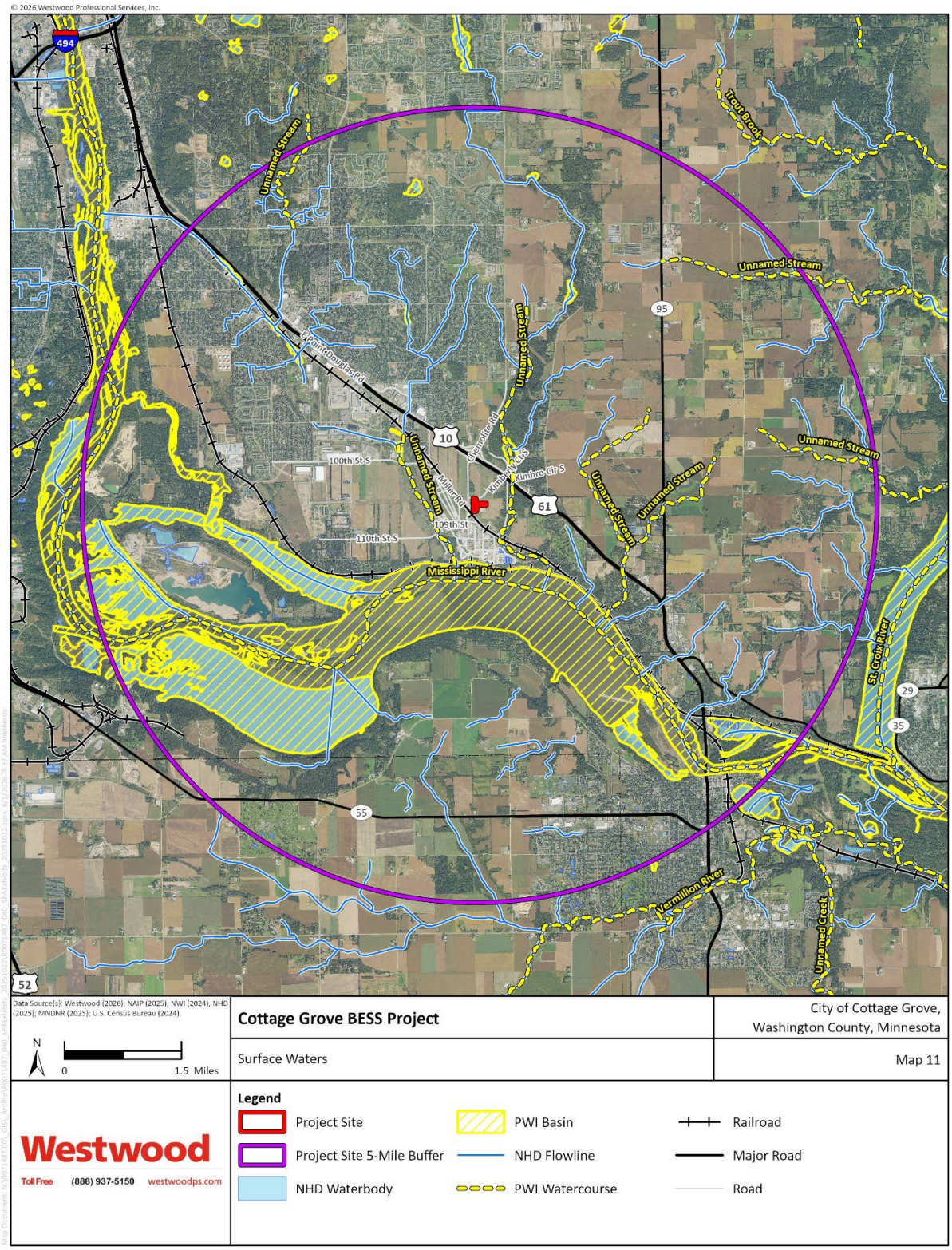
The Project is located in the Colby Lake (070102060902) HUC 12 watershed. No drain tile is known within the Project Site.

Rivers, Streams, Lakes, and Ditches

No rivers, streams, lakes, or DNR Public Waters are mapped within the Project Site (Map 11). The nearest Public Waters Inventory (PWI) waterbody is Pool 2, basin (Mississippi River) located approximately 3,400 feet south of the Project Site; the nearest PWI watercourse is the Mississippi River located approximately 3,400 feet south of the Project Site. No drainages ditches are mapped within the Project Area.

Wetlands

Wetlands are areas where water covers the soil or is present either at or near the surface of the soil all year or for varying periods of time during the year, including during the growing season. Water saturation (hydrology) largely determines how the soil develops and the types of plant and animal communities living in and on the soil. Wetlands may support both aquatic and terrestrial species. The prolonged presence of water creates conditions that favor the growth of specially adapted plants (hydrophytes) and promote the development of characteristic wetland (hydric) soils. Wetland types include marshes, swamps, bogs, and fens. Wetlands vary widely due to differences in soils, topography, climate, hydrology, water chemistry,



Map 11: Surface Waters

vegetation, and other factors.[115] Wetlands are important to the health of waterways and communities that are downstream. Wetlands can be one source of hydrology in downstream watercourses and waterbodies, detain floodwater, recharge groundwater supplies, remove pollution, and provide fish and wildlife habitat.

Wetland health also has economic impacts because of their key role in fishing, hunting, agriculture, and recreation. These large infrastructure projects could temporarily or permanently impact wetlands if these features cannot be avoided through project design. During construction, temporary disturbance of soils and vegetative cover could cause sediment to reach wetlands which could in turn affect wetland functionality.

The desktop wetland determination identified one wetland, a constructed stormwater pond, in the southwest portion of the Project Site (Map 12).

Calcareous Fens and Springs

No calcareous fens or springs are within the proposed Project Site. There are no calcareous fens in Washington County.[116] The nearest calcareous fen is more than 10 miles northwest of the Project Site near Gun Club Lake along the Minnesota River in Dakota County. The nearest spring is about one mile southwest of the Project Site near the Mississippi River.[117]

Impaired Waters

Under Section 303(d) of the Clean Water Act, states are required to assess all waters of the state to determine if they meet water quality standards, list waters that do not meet standards and update the list biannually and conduct total maximum daily load studies to set pollutant-reduction goals needed to restore waters to the extent that they meet water quality standards for designated uses. The list, known as the 303(d) list, is based on violations of water quality standards. The MPCA has jurisdiction over determining 303(d) waters in the State of Minnesota.

There are no impaired waters within the Project Site. The nearest impaired water to the Project site is an Unnamed Creek (AUID 07010206-517), impaired for ammonia – unionized, and fish bioassessment, approximately 0.3 mile east of the site and east of Keats Avenue.[118]

Stormwater

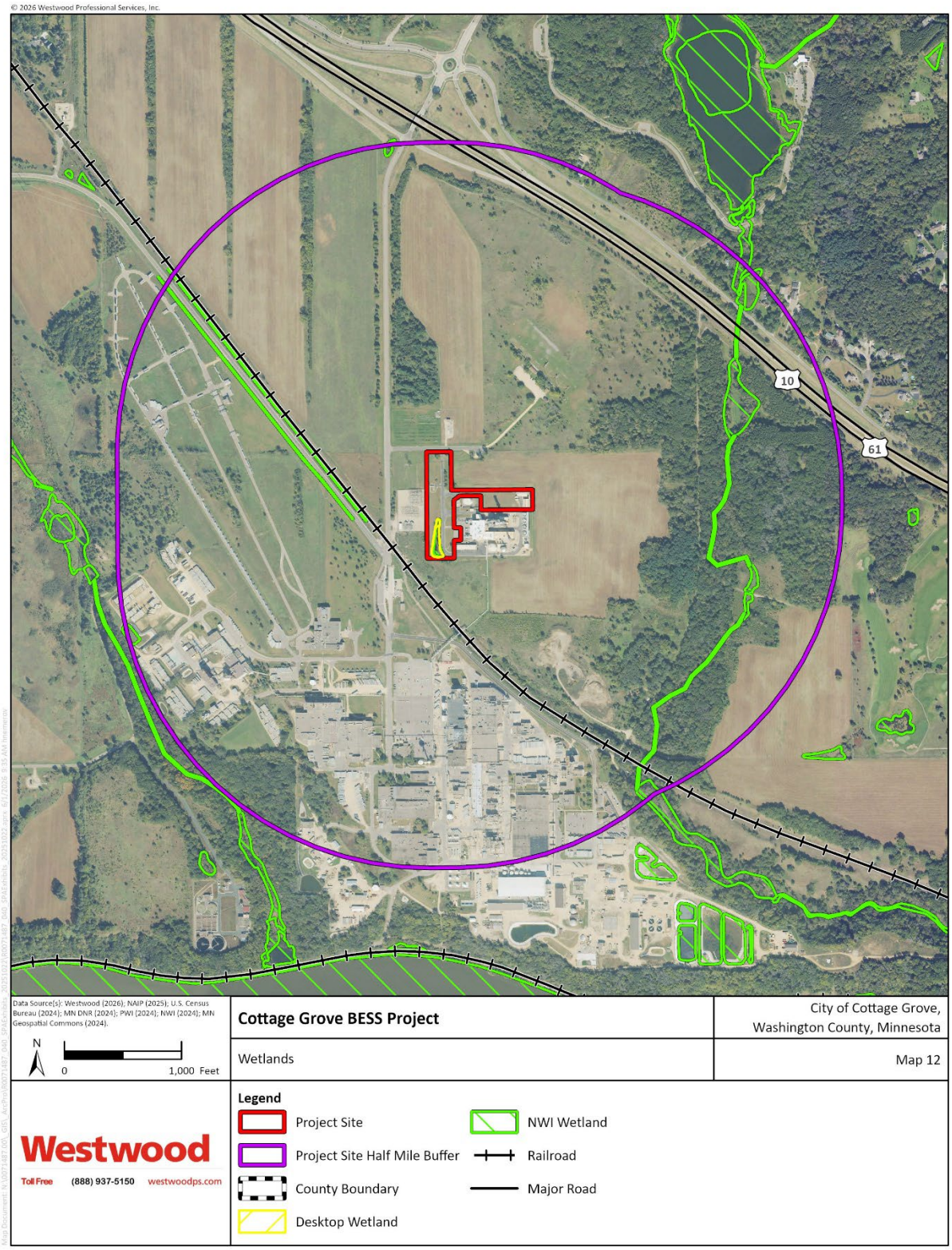
Approximately 13 acres of offsite surface water runoff enters the Project Site from the north and east. An existing stormwater basin and swale drains the existing site from north to south. There is one short culvert beneath the main road that outlets north of the existing stormwater basin. One aboveground catch basin pipe-head is located near the southern boundary of the wetland. There is significant offsite runoff draining

115 U.S. EPA. 2025. What is a Wetland. Updated April 7, 2025. https://www.epa.gov/wetlands/what-wetland.

116 DNR. Calcareous Fens, Resources. Listed Calcareous Fens. https://www.dnr.state.mn.us/wetlands/calcareous-fens.html. Accessed February 2026.

117 DNR. Minnesota Spring Inventory Map Viewer. https://gis.dnr.state.mn.us/arcgis/apps/experiencebuilder/experience/?id=07958a15ab6d4d58b2e54155ccc81a6c. Accessed February 2026.

118 MPCA. Impaired Waters: Final 2024. https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=fcfc5a12d2fd4b16bc95bb535d09ae82. Accessed February 2026.



Map 12: Wetlands

to the Project Site; existing swales divert much of this water around the Project Site.

Floodplains

Floodplains are flat, or nearly flat, land adjacent to a river or stream that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which includes areas covered by the flood, but which do not experience a strong current. Floodplains prevent flood damage by detaining debris, sediment, water, and ice. The Federal Emergency Management Agency (FEMA) delineates floodplains and determines flood risks in areas susceptible to flooding. The base flood that FEMA uses, known as the 100-year flood, has a one percent chance of occurring during each year. The DNR also oversees the national flood insurance program for the state of Minnesota. Floodplains are also regulated at the local level.

The FEMA Flood Insurance Rate Map (FIRM) was reviewed to determine the potential for existing floodplains in the Project Site. The Project is located within FIRM panel 27163C0416E (effective February 3, 2010). There are no mapped FEMA flood zones within the Project Site (Map 13).

6.7.4.2 Potential Impacts

The ROI for surface waters is the Project Site. Construction of the Project creates a potential for indirect impacts if sediment or fugitive dust created by excavation, grading, vegetation removal, and construction traffic reaching nearby surface waters.

Rivers, Streams, Lakes, and Ditches

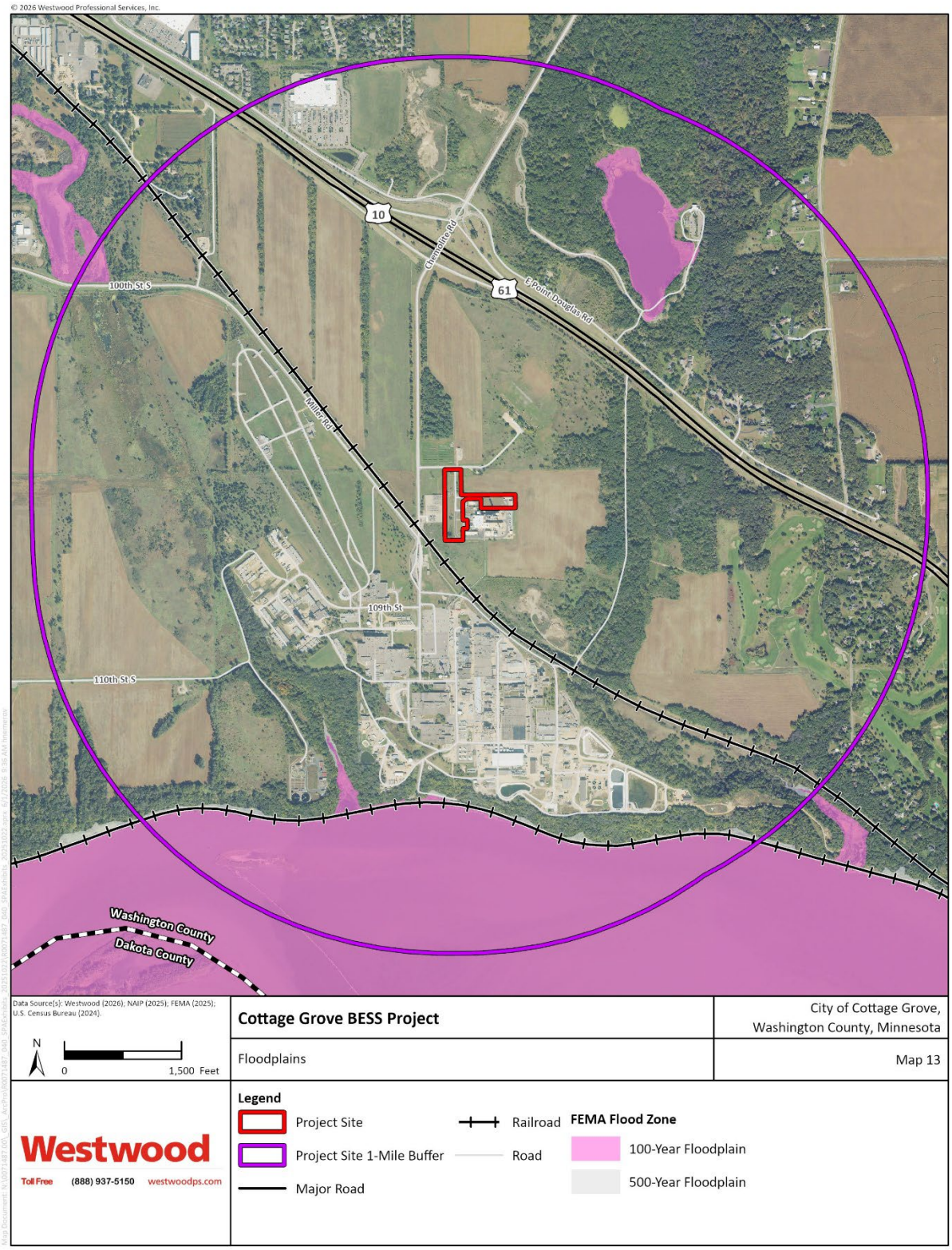
No impacts to rivers, streams, lakes, or ditches are anticipated.

Wetlands

A desktop wetland delineation determined there is one constructed stormwater pond within the Project Site. There are no waterways or drain tile identified within the Project Site. The stormwater pond identified in the southwest corner appears to have been created in an upland location during construction of the natural gas plant substation between 1991 and 2003. The stormwater pond is located in a non-hydric soil unit, and a review of historical aerial imagery between 1936 and 1991 shows the area as a cultivated upland agricultural field prior to the construction of the pond. This feature is likely incidental and not regulated by the WCA or Clean Water Act (CWA). The Applicant intends to complete a field wetland delineation during Q2 or Q3, 2026 to confirm the presence or absence of wetland features. The Project is being designed and engineered to avoid and minimize impacts to all regulated wetlands and other waters to the greatest extent practicable.

Impaired Waters

No impacts to impaired waters are anticipated. During construction, appropriate BMPs will be implemented and maintained in accordance with an NPDES/SDS CSW General Permit and SWPPP that will be in place for the Project. One infiltration trench and an infiltration basin (comprised of three stormwater ponds) will be used to collect and treat/discharge runoff following South Washington Watershed District and MPCA requirements.



Map 13: Floodplains

Stormwater

The Project Substation and BESS enclosures will be on raised pads; runoff from these areas will sheet flow north and south to an infiltration trench and infiltration basin (comprised of three ponds), respectively. Culverts are proposed onsite to route water through the site and maintain existing drainage patterns. The stormwater management practices will meet the requirements of the state of Minnesota, the city of Cottage Grove, and the South Washington Watershed District. The Preliminary Stormwater Management Report is provided in Appendix G. See the VMP in Appendix H for additional information on how the stormwater basins will be vegetated. See Section 3.3.9 for additional information on the stormwater basins.

Floodplains

No impacts to floodplains are anticipated.

6.7.4.3 Mitigation Measures

The Project will comply with the NPDES/SDS CSW General Permit, SPCC Plan, and SWPPP. Temporary construction impacts will be minimized by using BMPs that include erosion control measures identified in the MPCA Storm Water Best Management Practices Manual, such as using silt fencing, protecting soil stockpiles, controlling vehicle tracking, and prompt vegetation of stormwater control areas to control sediment runoff to any adjacent water resources. Disturbed surface soils will be stabilized at the completion of the construction process to minimize the potential for subsequent effects on surface water quality. Construction operations will be designed and controlled to minimize and prevent material discharge to wetlands outside the Project Site.

Stormwater will be managed through existing swales and proposed culverts in order to maintain existing drainage patterns, direct drainage to the infiltration facilities, and prevent inundation of infrastructure. The stormwater management swales and culverts will be vegetated in accordance with the VMP (Appendix H). Runoff rates for the proposed Project Site are reduced to below existing conditions by the proposed infiltration facilities.

No impacts to floodplains are anticipated and no mitigation measures are proposed.

Wetlands

The Project is being designed to avoid impacts to all regulated wetlands and other waters as shown in the Preliminary Site Plan (Map 3). Wetlands and other waters within Minnesota are regulated under the following:

- The Minnesota WCA of 1991, as amended, administered in this area by the Washington County Soil and Water Conservation District (SWCD);
- Section 404 and 401 of the Federal CWA administered by the USACE and the MPCA; and
- Minn. Stat. § 103G.245, administered by the DNR.

The preliminary design of the Project avoids all impacts to regulated waters through management of surface

water and runoff. No watercourses were identified within the Project Site. One desktop wetland, a constructed stormwater pond, exists within the Project Site. This stormwater pond appears to have been constructed in upland and is most likely considered incidental (defined in MR 8420.0105, Subp. 2D). The Applicant plans to complete a field wetland delineation and acquire all necessary approvals from the South Washington Watershed District and USACE prior to the start of construction. If the desktop delineated wetland within the Project Site is determined to not be incidental, the Applicant would request additional coordination with the USACE, MNDNR, and South Washington Watershed District to determine next steps and requirements.

Stormwater

Measures to mitigate topsoil removal include limiting removal to areas designated for grading and construction of roads and permanent structures. Impacts to soils will be mitigated by incorporating sediment and erosion control measures during and following construction. Construction activities will incorporate erosion and sediment control BMPs outlined in the SWPPP, which will be specifically prepared for the Project. The SWPPP will include a discussion on topsoil and compaction management in alignment with the VMP. During the operating life of the Project, erosion control will be primarily accomplished through establishment of a perennial vegetative cover in non-gravel areas of the Project Development Area, installation of gravel roads with culverts (as necessary) to redirect concentrated surface water and management of surface water runoff in on-site ponds. These actions will preserve the soils in place. The Applicant will implement BMPs during construction and operation to reduce and mitigate any potential impacts from soil disturbances. The Applicant will also implement vegetation management during construction and post-construction operations in accordance with BMPs and measures listed in the VMP (Appendix H).

6.7.5 Vegetation

6.7.5.1 Existing Environment

As noted in Section 6.3, the Project Site is located in the St. Paul Baldwin Plains and Moraines Subsection.[119] Vegetation at the time of the public land survey (1847-1907) in this subsection consisted primarily of oak and aspen savanna. Tallgrass prairie and maple-basswood forests were also common. Today the subsection consists primarily of urban development.

Based on the Desktop Wetland Determination Memorandum previously mentioned in Section 6.7.3, one wetland was identified in the southwest portion of the Project Site. Refer to Section 6.7.3 for more information on surface waters.

According to the 2024 Minnesota Land Cover Classification System (MLCCS),[120] the Project Site is primarily comprised of artificial surfaces and associated areas (93.9%). Table 6.7-4 summarizes the land cover acreages within the Project Site. The artificial surfaces are associated with the existing LSP Cottage Grove Cogeneration Plant and roads.

[119] DNR. Ecological Classification System. https://www.dnr.state.mn.us/ecs/index.html. Accessed January 2026.

[120] DNR. 2024. Land Cover – Minnesota Land Cover Classification System. Minnesota Geospatial Commons GIS Download. https://gisdata.mn.gov/dataset/biota-landcover-mlccs" https://gisdata.mn.gov/dataset/biota-landcover-mlccs. Accessed February 2026.

Table 6.7-4: MLCCS Land Cover within the Project Site

Land Cover Category	Area (acres)	Percent of Project Site
Artificial Surfaces and Associated Areas	6.4	94.1
Buildings and pavement with 76-90% impervious cover	4.7	69.1
4% to 10% impervious cover with perennial grasses	1.7	25.0
Surface Waters		
Desktop Delineated Wetland [1]	0.4	5.9
Planted or Cultivated Vegetation		
Upland Soils – cropland [2]	<0.1	0.3
TOTAL	**6.8**	**100**

[1] Based on a Desktop Wetland Determination Memorandum written on November 18, 2025.

[2] There is no cropland within the Project Site. The areas not covered by the existing facilities consist of maintained herbaceous vegetation.

6.7.5.2 Potential Impacts

The ROI for Vegetation is the Project Site. Approximately 3.3 acres of the existing maintained herbaceous vegetation will be converted to a mixture of impermeable surfaces and perennial vegetation for the life of the Project. Changes in vegetative cover can cause soil erosion, impact wildlife habitat, and alter runoff and water flow patterns. Additionally, disturbance of vegetative cover can provide opportunities for invasive species to take root or reduce existing native vegetation.

Vegetation goals for operating the BESS Facility include establishing stable ground cover, improving and maintaining soil health, installing perennial seed mixes, reducing erosion and runoff, and improving infiltration. The preliminary VMP found in Appendix H outlines several vegetation maintenance strategies that may be implemented at the Project. Vegetated areas within the Preliminary Development Area will be managed in a variety of ways to ensure the establishment and longevity of planted species. Areas outside the Preliminary Development Area will be maintained in a manner consistent with surrounding land use. The Applicant will decommission and remove all Project components from the Project Site and will complete restoration activities at the end of the Project's anticipated useful life, resulting in vegetation restoration as described in the preliminary VMP.

6.7.5.3 Mitigation Measures

The Applicant has prepared a preliminary VMP (Appendix H) which includes BMPs and plans for vegetation management during and post-construction. Some of the BMPs from the VMP include establishing perennial seed mixes, separation of topsoil and subsoil, noxious or invasive weed management, herbicide use, and routine maintenance throughout the life of the Project. The Sample Site Permit (Appendix K) includes several standard conditions to address impacts to vegetation:

- The permittee to employ BMPs to avoid potential introduction and spread of invasive species and to file an Invasive Species Management Plan prior to construction;

- The permittee shall only disturb the vegetation within the site to the extent necessary to construct the Project;
- The permittee to develop a VMP (provided in Appendix H); and
- The permittee to take all reasonable precautions to prevent the spread of noxious weeds during construction

6.7.6 Wildlife and their Habitats

6.7.6.1 Existing Environment

Wildlife species that are likely to be present in the Project Site include common species that are adapted to an industrial setting consisting of limited natural vegetation, maintained herbaceous vegetation, and impervious surfaces in a fenced area. As noted in Section 6.7.4, approximately 94.1% of the Project Site consists of artificial surfaces and associated areas; 5.9% consists of a desktop delineated wetland, and 0.3% consists of maintained vegetation.

The conversion of vegetated and wetland areas within the Preliminary Development Area does not create a significant reduction in wildlife habitat within the vicinity. A greater diversity of wildlife habitats for migratory birds and other wildlife is present outside of the Project Site. Although agricultural and herbaceous maintained land is the dominant land cover type in the area surrounding the Project Site, the extensive forested areas around Cottage Grove Ravine Regional Park and Eagle Ridge Ravine, which are located approximately 0.5 mile north of the Project Site, and the wooded areas and unnamed tributary approximately 0.3 mile east of the Project Site, provide higher quality habitat for wildlife (Maps 9 and 12).

Non-Avian Species

Mammals likely to be present in the Project Site include the thirteen-lined ground squirrel (*Ictidomys tridecemlineatus*), and various mouse species. Reptiles and amphibians likely to be found in the Project Site include the common garter snake (*Thamnophis sirtalis*) and various frog species including the American toad (*Anaxyrus americanus*) and northern leopard frog (*Lithobates pipiens*). Pollinators likely to be present within the Project Site include the cabbage butterfly (Pieris rapae), common eastern bumblebee (*Bombus impatiens*), as well as various honeybee species.

Avian Species

Bird species that may utilize the Project Site's vegetated and wetland areas include the American Crow (*Corvus brachyrhynchos*), Common Grackle (*Quiscalus quiscula)*, Mourning Dove (*Zenaida macroura*), American Robin (*Turdus migratorius*), Red-winged Blackbird (*Agelaius phoeniceus*), and various small perching birds. Additionally, due to the Project Site's proximity to the Mississippi River it is likely that common raptors such as the Red-tailed Hawk (*Buteo jamaicensis*), Turkey Vulture (*Cathartes aura*), and Bald Eagle (Haliaeetus leucocephalus) could be seen flying over site.

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.[121] An abundance of rivers and lakes makes the Mississippi Flyway an ideal route for waterfowl, shorebirds, and other waterbirds.[122]

The Project Site is located within the Eastern Tallgrass Prairie Bird Conservation Region (BCR 22). The USFWS identified 25 species of birds within BCR 22 as Birds of Conservation Concern (BCC); BCC are avian species that represent the agency's highest conservation priorities.[123]

Based on the January 19, 2026 USFWS IPaC report (Appendix O), birds of particular concern are listed in Table 6.7-5 because they occur on the BCC list or could potentially occur in the Project vicinity.

Table 6.7-5: IPaC Report Identified BCC or Other Species of Concern

Common Name	Scientific Name	Breeding Season
Bald Eagle	*Haliaeetus leucocephalus*	Breeds Oct 15 to Aug 31
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Breeds May 15 to Oct 10
Bobolink	*Dolichonyx oryzivorus*	Breeds May 20 to Jul 31
Chimney Swift	*Chaetura pelagica*	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will	*Antrostomus vociferus*	Breeds May 1 to Aug 20
Grasshopper Sparrow	*Ammodramus savannarum perpallidus*	Breeds June 1 to Aug 20
Henslow's Sparrow	*Centronyx henslowii*	Breeds May 1 to Aug 31
Lesser Yellowlegs	*Tringa flavipes*	Breeds elsewhere
Pectoral Sandpiper	*Calidris melanotos*	Breeds elsewhere
Prairie Loggerhead Shrike	*Lanius ludovicianus excubitorides*	Breeds Feb 1 to Jul 31
Prothonotary Warbler	*Protonotaria citrea*	Breeds Apr 1 to Jul 31
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Breeds May 10 to Sep 10
Ruddy Turnstone	*Arenaria interpres morinella*	Breeds elsewhere
Rusty Blackbird	*Euphagus carolinus*	Breeds elsewhere
Semipalmated Sandpiper	*Calidris pusilla*	Breeds elsewhere
Upland Sandpiper	*Bartramia longicauda*	Breeds May 1 to Aug 31
Wood Thrush	*Hylocichla mustelina*	Breeds May 10 to Aug 31

The Migratory Bird Treaty Act (MBTA) of 1918 regulates the taking, selling, transporting, and importing of migratory birds, their nests, eggs, parts, or products.[124] The MBTA protects more than 1,000 species of

[121] USFWS. 2017. USFWS Administrative Waterfowl Flyway Boundaries. [Shapefile]. https://ecos.fws.gov/ServCat/Reference/Profile/42276. Accessed February 2026.

[122] American Bird Conservancy. 2022. Avian Superhighways: The Four Flyways of North America. Article. May 16, 2022. https://abcbirds.org/news/four-flyways-of-north-america/.

[123] USFWS. 2021. Birds of Conservation Concern. U.S. Fish and Wildlife Service Migratory Bird Program. https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf. Accessed February 2026.

[124] See 16 U.S.C. 703–712.

birds that occur within the United States. Most birds within the Project site would be afforded protection under the MBTA. The Bald and Golden Eagle Protection Act (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 interference with feeding, sheltering, roosting, and breeding or abandonment of a nest.[125]

Wildlife Habitats

As noted in Section 6.4.10, no WMAs, SNAs, USFWS waterfowl protection areas, state or federal wildlife refuges, state parks, state forests, or federal forests were identified within the Project Vicinity.

No conservation easements or lands held in government programs such as Conservation Reserve Program or Reinvest in Minnesota were identified within the Project Site. The nearest protected areas are located about 0.5 mile northeast of the Project and include Cottage Grove Ravine Regional Park and Eagle Ridge Ravine located north of U.S. Highway 10/61.[126,127,128]

No waterfowl feeding and resting areas are located within one mile of the Project Site.[129]

Audubon Important Bird Areas 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 designates Important Bird Areas in Minnesota; monitor these areas for changes to birds and their habitats; and conserve these areas for long-term protection of birds.[130] The Project Site is within the Mississippi River Twin Cities Important Bird Area. [131]

6.7.6.2 Potential Impacts

The ROI for non-avian wildlife species and their habitats is the Project Site while the ROI for avian species is the Project Vicinity. Wildlife will be displaced to surrounding habitats during construction. Because the Project Site is within an existing fenced area and does not provide critical habitat, this should not impact life cycle functions such as reproduction. Direct significant impacts to individuals could occur but are unlikely since the Project is within an existing fenced and industrial area. Small species could be crushed or otherwise killed during construction. Population level impacts are not anticipated.

The proposed additional fencing creates minimal potential for wildlife impacts. The only proposed

125 USFWS. 2007. National Bald Eagle Management Guidelines. Arlington, VA. https://www.fws.gov/sites/default/files/documents/national-bald-eagle-management-guidelines_0.pdf.

126 Board of Water and Soil Resources. Reinvest in Minnesota Overview. https://bwsr.state.mn.us/reinvest-minnesota-overview. Accessed February 2026.

127 Natural Resources Research Institute. Minnesota Natural Resource Atlas. https://mnatlas.org/gis-tool/. Accessed February 2026.

128 USGS. Protected Area Database (PADUS). https://maps.usgs.gov/padusdataexplorer/. Accessed February 2026.

129 DNR. Migratory Waterfowl Feeding and Resting Areas. https://gisdata.mn.gov/dataset/env-migratory-waterfowl-areas. Accessed February 2026.

130 DNR. Important Bird Areas. https://www.dnr.state.mn.us/iba/index.html. Accessed February 2026.

131 Audubon. 2020. Minnesota Important Bird Areas Interactive Map. https://www.arcgis.com/home/webmap/viewer.html?webmap=3b3d225539f8449daf84be6aa89eab50. Accessed February 2026.

additional fencing will be within the existing industrial site. Bird injuries or mortality may occur due to lack of fencing visibility. Local avian species, particularly raptors, may be vulnerable to fence collisions. Additionally, predators can use fences to corner and kill prey species. Because of the Project's relatively small footprint, the Project is within an existing fenced area, and the industrial nature of the Project Site, any impacts are anticipated to be minimal.

Plastic netting is frequently used for erosion control during construction projects and can negatively impact wildlife populations. Birds, fish, mammals, and reptiles are all susceptible to entanglement and death in plastic netting.[132]

The Project Site has scattered trees along the access roads. As a result, few migratory bird species that use trees or forested areas to roost or forage (such as the Bald Eagle and Red-headed Woodpecker) are likely to be present within the Project Site. With either minimal or no tree-clearing taking place, nesting habitat will remain intact, and impacts to birds using these areas will be limited. The Project Site has no open water, and one small desktop delineated wetland (presumed to be a stormwater pond) in the southwest corner (Section 6.7.4). Due to the size of the wetland, it is unlikely to support wetland- or water-dependent BCC (such as the Ruddy Turnstone or Lesser Yellowlegs). Overall, few if any BCC are likely to use the Project Site as habitat.

6.7.6.3 Mitigation Measures

BMPs provided in the preliminary VMP (erosion control measures, time of year tree clearing considerations, native seeding, etc.) will serve to stabilize, protect, and mitigate potential impacts within the Project site. Since the majority of the fence surrounding the Project is already existing, no mitigation measures for the fence installation is proposed. The Applicant will implement BMPs during construction, post-construction, and operational phases of the Project.

The Sample Site Permit (Appendix K) includes several measures to minimize impacts to wildlife:

- The permittee to report "any wildlife injuries and fatalities" to the MPUC on a quarterly basis; and
- The permittee to use wildlife-friendly erosion control materials and mulch products without synthetic (plastic) fiber additives or malachite green dye.

6.7.7 Rare and Unique Natural Resources

Construction and operation of large energy facilities may adversely impact rare and unique resources through the taking or displacement of individual plants or animals, invasive species introduction, and habitat loss.

6.7.7.1 Existing Environment

The Applicant conducted a desktop wildlife habitat assessment, to identify and evaluate the available habitat in the Project Site and vicinity that may be used by threatened or endangered species listed in the IPaC or

[132] DNR. 2013. Wildlife-friendly Erosion Control. https://files.dnr.state.mn.us/eco/nongame/wildlife-friendly-erosion-control.pdf.

DNR Minnesota Conservation Explorer tool. The desktop assessment revealed several species potentially present in the surrounding areas with minimal nesting habitat within the Project Site for listed avian species. Additional information on habitat and wildlife can be found in Appendix O.

Federally Listed Species

The USFWS IPaC portal was most recently reviewed on January 19, 2026 (Appendix O) for federally endangered and threatened species, candidate species, and designated critical habitat that may occur in the Project vicinity. The IPaC results identified two federally endangered species (the Higgins eye [*Lampsilis higginsii*], and rusty patched bumblebee [*Bombus affinis*]); and one federally designated as non-essential experimental population (the Whooping Crane [*Grus americana*]) within or near the Project Site. The IPaC report also identified one federally proposed endangered species (the salamander mussel [*Simpsonaias ambigua*]); and two federally proposed threatened species (the monarch butterfly [*Danaus plexippus*], and western regal fritillary [*Argynnis idalia occidentalis*]), which are not afforded any protections at this time. Based on a desktop assessment of the Project Site and review of landcover of adjacent properties, no significant habitat is present for identified species to occur.

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 Project Site are primarily artificial surfaces and associated areas (94.1%); 5.9% consists of a desktop delineated wetland, and 0.3% consists of maintained vegetation (Section 6.7.4). There is no forested land within the Project Site. As a result, few migratory bird species that use trees or forested areas as habitat will be present, such as Bald Eagles.

State Listed Species

Westwood submitted a formal DNR Natural Heritage Information System Data request for the Project Site. In a letter dated December 18, 2025, the Natural Heritage Review Team identified two state-listed species in T27N, R21W, Section 27— Loggerhead Shrikes (*Lanius ludovicianus*) and the Blanding's Turtle (*Emydoidea blandingii*) (Appendix O). Habitat use and species information was obtained from the DNR Rare Species Guide.

Loggerhead Shrikes are typically found in grassland habitats with scattered perching sites such as shrubs, fences, or small trees.[133] They have been found in native prairies, pastures, shelterbelts, old fields, orchards, cemeteries, grassy roadsides, and farmyards. Suitable habitat does not appear to be present within the Project Site. Additionally, the DNR response letter indicates that the presence of Loggerhead Shrikes within the Project Site is unlikely.

Blanding's Turtles use upland areas, up to and over a mile away from wetlands and other water bodies, for nesting. Calm, shallow waters including wetlands associated with rivers and streams with adequate aquatic vegetation, are preferred. Small temporary wetlands are frequently used for foraging, basking, and mating. In Minnesota, shrub wetlands are used throughout the year. Overwintering occurs in waters at least three

[133] DNR. 2022. Rare Species Guide: an online encyclopedia of Minnesota's rare native plants and animals [web application]. Minnesota Department of Natural Resources, St. Paul. www.dnr.state.mn.us/rsg. Accessed January 2026

feet deep that do not fully freeze in winter.[134] There is potentially suitable foraging Blanding's Turtle habitat within the vegetated stormwater pond in the southwest corner of the Project Site. However, due to the existing fence surrounding the stormwater pond and entire Project Site, the Blanding's Turtle is unlikely to use the stormwater pond as foraging habitat. The existing stormwater pond also likely freezes solid, therefore would not be suitable overwintering habitat for the Blanding's Turtle.

High Value Natural Resources

High value natural resources include native plant communities, wetlands, state and federally listed species, public lands and waters, and other important resources. High value natural resources include:[135]

- Rare species and native plant communities;
- Minnesota Biological Survey (MBS) sites of biodiversity significance and DNR native plant communities (NPCs);
- Species and habitats included in the Wildlife Action Network and Minnesota Wildlife Action Plan;
- Lakes, wetlands, streams, and rivers;
- Large block habitats;
- Public conservation and recreation lands; and
- Properties in government programs or with conservation easements.

These high value resource areas are described in the following sections.

Native Plant Communities and Native Prairie Banks

The DNR MBS assigns ecologists to map and classify NPCs 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 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.[136]

Based on review of the DNR NPC data, no NPCs have been identified in the Project Site. There are seven NPCs located within the Project Area. The closest NPC, Dry Sand – Gravel Oak Savanna (UPs14b), is located approximately 0.5 mile southeast of the Project Site (Map 14).

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

134 DNR. 2025. Blanding's Turtle (*Emydoidea blandingii*). https://www.dnr.state.mn.us/rsg/profile.html?action=elementDetail&selectedElement=AR AAD04010.

135 DNR. 2023. Commercial Solar Siting Guidance. https://files.dnr.state.mn.us/publications/ewr/commercial_solar_siting_guidance.pdf

136 DNR. 2025. Guidelines for Assigning Statewide Biodiversity Significance Ranks to Minnesota County Biological Survey Sites. https://files.dnr.state.mn.us/eco/mcbs/biodiversity_significance_ranking.pdf

native prairie vegetation that originated from the site.

A desktop native prairie assessment was conducted on November 25, 2025 to evaluate the Project Site for potential native prairies. Historical aerial imagery, geospatial information on native prairies and plant communities, historic USDA Conservation Reserve Program information, and USFWS National Wetlands Inventory were reviewed. Areas that were excluded from consideration included: row crops or tilled fields, bare or developed ground, forests, wet meadows with clear signature of reed canary grass, and open water or inundated wetlands. Based on the assessment, no native prairies were identified within the Project Site. See Appendix P for more details on the native prairie assessment.

According to the DNR, no native prairie banks are located within the Project Area or within the Region. The closest native prairie bank is located approximately 28 miles south of the Project Site in Goodhue County.[137]

Wildlife Action Network and Minnesota Wildlife Action Plan

Minnesota's State Wildlife Action Plan (SWAP; 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 Endangered Species Act. The SWAP 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 federal and state listed species that occur in Minnesota are automatically listed as SGCN.[138]

The Wildlife Action Network was developed as part of the 2015-2025 SWAP revision to assist in focusing conservation efforts. The Wildlife Action Network is comprised of 10 geographic information systems (GIS) data layers that represent quality terrestrial and aquatic habitats, buffers, and corridors across the state that support SGCN. The Wildlife Action Network is scored based on five metrics: SGCN population viability scores, SGCN richness, spatially prioritized Sites of Biodiversity Significance, ranks of Lakes of Biological Significance, and Stream Indices of Biological Integrity.[139] The Project Site is mapped within entirely within a medium rank Wildlife Action Network area (Map 14). [140]

Lakes, Wetlands, Streams, and Rivers

No lakes, streams, or rivers are present within or adjacent to the site. One stormwater pond is located within the Project Site. See Section 5.5.5 (Surface Waters) for additional information on water resources.

Large Block Habitats

Large, contiguous 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.

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137 DNR. 2018. Minnesota Native Prairie Bank. https://files.dnr.state.mn.us/destinations/snas/NPBstatemap.pdf.

138 DNR. 2021. Minnesota's Wildlife Action Plan, 5-Year Report. https://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/mnwap/wap-5-yr-report.pdf.

139 DNR. 2016. The Wildlife Action Network developed for the 2015-2025 MN Wildlife Action Plan. https://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/mnwap/mndnr_wildlife_action_network_description.pdf.

140 DNR. 2015. MNWAP Wildlife Action Network. Shapefile. https://gisdata.mn.gov/dataset/env-mnwap-wildlife-action-netwrk.

The Project is sited on industrial lands and no large block habitats intersect the Project Site. One Regionally Significant Ecological Area, ranked High, is located in the Project Vicinity, approximately 390 feet northeast of the Project Site.[141] Adjacent property uses include industrial buildings, row-crop agriculture, a shooting range, an idle solar garden, and small woodlots not conducive to provide habitat for any large number of species or area-sensitive species.

Recreation Lands

Refer to Section 6.4.8 for information on recreational lands.

Properties in Government Programs or Conservation Easements

No land held in government programs or conservation easements was identified in the Project Area. The Project Site is currently fenced in mowed grass surrounding the existing LSP Cottage Grove Cogeneration Facility.

6.7.7.2 Potential Impacts

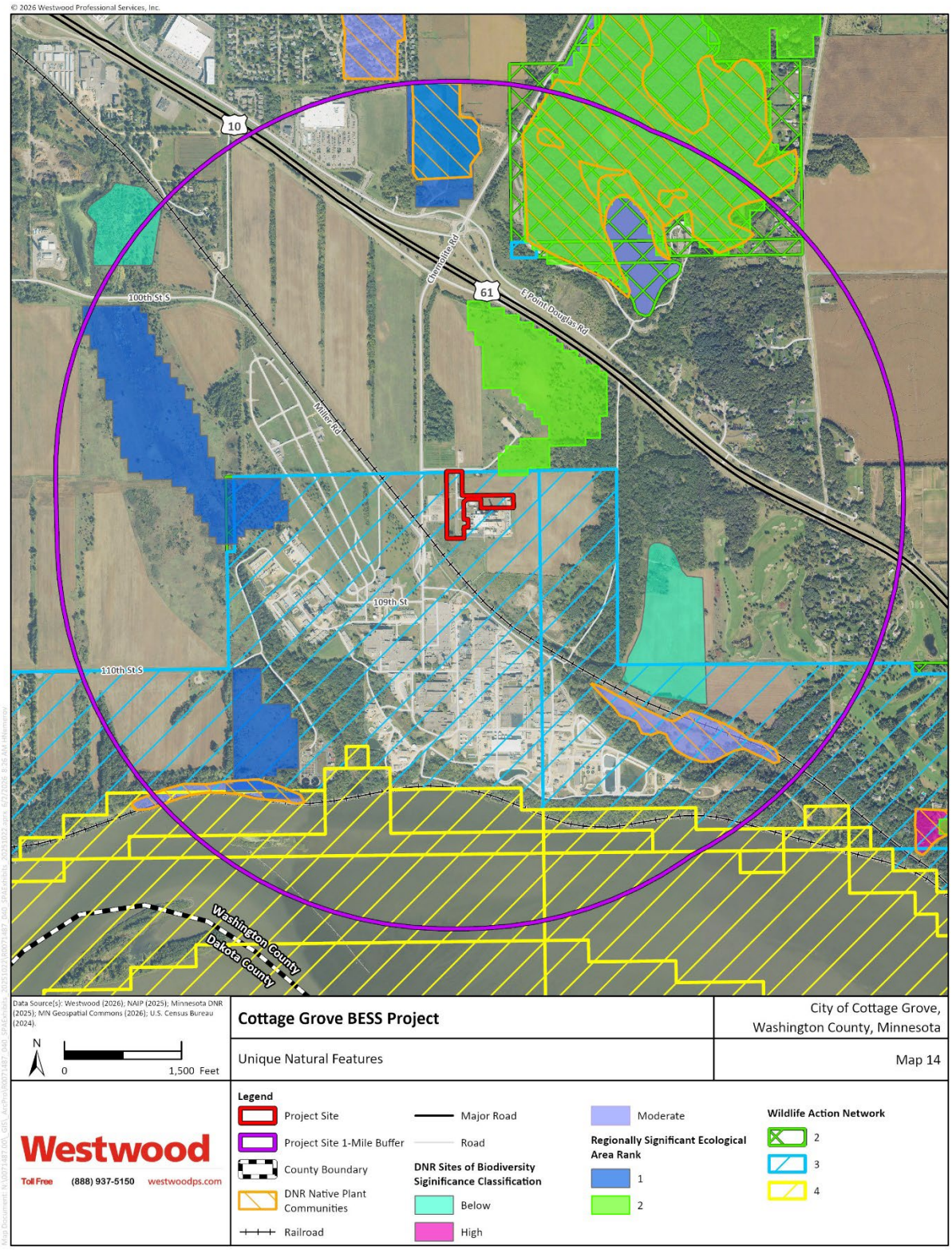
The ROI for rare and unique natural resources is the Project Vicinity.

Federally Listed Species

No permanent impacts to any federally listed species are anticipated throughout construction and operation of the Project. The Rangewide Rusty Patched Bumble Bee Determination Key was completed in IPaC and reached a determination of may affect - Not Likely to Adversely Affect (Appendix O). Additional coordination for the rusty-patched bumble bee will be completed during the permitting process if necessary. Impacts to Higgins eye are not anticipated since there are no national hydrography dataset flowlines identified in the Project Site. The Minnesota-Wisconsin Endangered Species Determination Key reached a determination of no effect for the Higgins eye (Appendix O). Impacts to Bald Eagles are not anticipated from the Project as there is no suitable nesting habitat within the Project Site.

Temporary impacts could occur for the rusty-patched bumble bee during construction and removal of foraging habitat. These impacts are expected to be minimal as there is limited potential habitat within the Project Site. Temporary impacts to other rare species are not anticipated due to the lack of habitat within the Project Site and surrounding area.

[141] DNR. 2020. Regionally Significant Ecological Areas and Regional Ecological Corridors - MLCCS derived 2014 / 2020. https://gisdata.mn.gov/dataset/env-mlccs-regional-corr-areas.



Map 14: Unique Natural Features

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 Project Site's current condition is highly disturbed from industrial activities (54.1% developed, low intensity). The DNR formal response to the Natural Heritage Information System request for the Project was received on December 18, 2025 (Appendix O). The formal review identified the Blanding's turtle, a state-listed threatened species, as having potential to be impacted by the Project through direct fatalities and habitat destruction. Since the Project Site is currently fully fenced, it is unlikely that the Blanding's Turtle would be found on site and no impacts are anticipated at this time. The formal review also identified Loggerhead Shrikes, a state-listed endangered bird, as being historically documented within the Project vicinity. The DNR formal response letter states it's unlikely for this bird to be present at the Project Site, so no impacts are anticipated.

DNR High Value Areas

No DNR high value areas are located within the Project Site. One Regionally Significant Ecological Area is located within the Project Vicinity, approximately 390 feet northeast of the Project Site (Map 14). The Project is located in a Wildlife Action Network, but due to the Project being within an existing fenced area and industrial site, impacts are not anticipated.

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 Project Site. The SWPPP will also be implemented during construction of the Project.

Native Prairie

Because the Project Site is within an existing industrial area and no native prairie areas are located in the Project Site, no impacts are anticipated and no mitigative measures are proposed.

The Project does not contribute to significant habitat loss or degradation or create new habitat edge effects.

6.7.7.3 Mitigation Measures

The Sample Site Permit (Appendix K) includes several measures to minimize impacts to rare and unique resources:

- The permittee to "implement erosion prevention and sediment control practices recommended by the MPCA" and to obtain a CSW permit. This section also requires the permittee to implement erosion and sediment control measures, grade contours to provide for proper drainage, and restore all disturbed areas to pre-construction conditions;
- The permittee to employ BMPs to avoid potential introduction and spread of invasive species and to file an Invasive Species Management Plan prior to construction;
- The permittee to take all reasonable precautions to prevent the spread of noxious weeds during construction;
- The permittee to consider the DNR's recommendations regarding tree clearing timing restrictions from June 1 to August 15; and

- The permittee to coordinate with DNR when developing the Invasive Species Management Plan.

BMPs concerning erosion control and vegetation will serve to stabilize, protect, and mitigate negative impacts to the natural landscape surrounding the Project site. The SWPPP will also be implemented during construction of the Project. The Applicant intends to coordinate with the DNR regarding necessary mitigation strategies identified in the Natural Heritage Review and potential impacts to the Wildlife Action Network area. Since the Project is within an industrial area that does not contain preferred habitat for most bird species, no mitigation measures specifically regarding BCC or other protected bird species are proposed.

The following additional mitigative measures are recommended to mitigate the risk of take for protected species and will be taken into consideration by the Applicant:

- If a nest is present, USFWS recommends that any Bald Eagle nest be buffered by at least 660 feet from project activities.
- The following conservation measures for the Blanding's turtle were recommended by the DNR in the Natural Heritage Review (Appendix O):
    a. Avoid wetland and aquatic impacts during overwintering season, between September 15 and April 15, if the area is suitable for overwintering.
    b. Wetlands and aquatic habitats that freeze solid to the bed (no liquid water) are not suitable overwintering habitat; however, Blanding's turtles will overwinter in wetlands and aquatic habitat where ice has closed over the water's surface.
    c. Limit erosion and sediment control to wildlife friendly erosion control.
        i. Check bare ground within construction areas for turtles before the use of heavy equipment or any ground disturbance.
    d. The Blanding's turtle flyer must be given to all contractors working in the area (Appendix O).
    e. If turtles are in imminent danger, move them by hand out of harm's way; otherwise, they are to be left undisturbed.
- Report any sightings using the DNR Plant and Animal Observation Form.[142]
    a. If the above conservation measures are not feasible, further coordination with the DNR is recommended. A full list of DNR recommendations can be found in Appendix O.
- If construction takes place after the monarch butterfly or western regal fritillary are listed, further assessment for avoidance and minimization measures may be warranted.
- Further coordination with the USFWS and DNR for the rusty-patched bumble bee and implementation of BMPs to limit impacts to potentially suitable nearby habitat. Revegetation may include pollinator-friendly plants, in accordance with the VMP.

[142] MNDNR. Plant and Animal Observations. https://survey123.arcgis.com/share/f1cf3334dd7d4200a30bb003a13f4e29?portalUrl=https://gis.dnr.state.mn.us/arcgis

6.7.8 Greenhouse Gases

6.7.8.1 Existing Environment

GHGs are gases that warm the atmosphere and surface of the planet. The primary GHGs are carbon dioxide, nitrous oxide, methane, sulfur hexafluoride, and hydrofluorocarbons and perfluorocarbons. GHGs come from a variety of sources, with fossil fuel combustion being responsible for most CO_2 emissions in Minnesota. The majority of fossil fuels used today generate electricity and fuel vehicles.[143]

According to the MPCA, statewide GHG emissions have declined approximately 14 percent between 2005 and 2022, reflecting ongoing transitions in the state's energy, transportation, and industrial sectors. The electricity generation sector has achieved the largest reduction of more than 50 percent, primarily due to the retirement of coal-fired units and increased deployment of renewable energy resources. In contrast, transportation and agriculture now represent the two largest sources of GHG emissions, contributing roughly 29 and 25 percent of the statewide total, respectively. Despite reductions in GHG emissions, Minnesota remains short of its statutory goal to reduce GHG emissions 50 percent below 2005 levels by 2030 and achieve net-zero emissions by 2050, as established under the 2023 Climate Action Framework.[144]

6.7.8.2 Potential Impacts

The ROI for greenhouse gases is the Region. 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. The Company will minimize emissions from construction vehicles by using modern equipment with lower emissions ratings and properly functioning exhaust systems. 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 N). 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. As detailed in Appendix N, total estimated fuel consumption during construction includes approximately 23,315 gallons of diesel and 7,215 gallons of gasoline, resulting in 301,389.4 kilograms (332.2 tons) of CO_2.

Operational air emissions from BESS 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. Additional minor emissions may result from auxiliary systems like HVAC units, but these are usually limited and subject to regulatory controls. As detailed in Appendix N, total estimated fuel consumption during annual operation includes approximately 2,600 gallons of gasoline, resulting in 22,828 kilograms (25.2 tons) of CO_2. Detailed GHG emission calculations for CO_2, CH_4 (methane), and N_2O are provided in Appendix N.

Overall, GHG emissions from the Project are temporary and primarily limited to the construction phase in

[143] MPCA and DOC. 2023. Greenhouse Gas Emissions in Minnesota, 2005-2020. Report to the Legislature. https://www.pca.state.mn.us/sites/default/files/lraq-2sy23.pdf

[144] MPCA. Greenhouse Gas Emissions in Minnesota 2005–2022. Biennial Inventory Report Tracking the State's Greenhouse Gas Emissions Contributing to Climate Change (January 2025). https://www.pca.state.mn.us/sites/default/files/lraq-3sy25.pdf. Accessed February 2026.

close proximity to the Project site, with operational emissions representing a negligible ongoing source. GHG emission estimates demonstrate that the Project will have a minimal contribution to statewide GHG emissions and is consistent with Minnesota's decarbonization and clean energy transition goals. Air quality impacts on the surrounding environment are expected to be negligible due to the short-term and intermittent nature of construction-related emissions.

For these reasons, greenhouse gas impacts are considered to be minimal.

6.7.8.3 Mitigation Measures

The Applicant will implement BMPs during construction to minimize emissions such as reducing vehicle speeds, proper maintenance of equipment, and limiting idling. Following construction, the facility will not generate pollutant emissions during normal operation as batteries do not emit GHG.

6.7.9 Climate Change and Resilience

Through its strategic and land use planning initiatives, the City of Cottage Grove has prioritized environmental sustainability and sustainable practices. The City's 2040 Comprehensive Plan includes a brief discussion of some of the ways the city is preparing and attempting to mitigate the effects of climate change. Additionally, Washington County is in process of completing a Climate Action Plan that will further guide the county's responses and steps to reducing emissions.

The project has the potential to support the shift of energy production in Minnesota and the upper Midwest toward carbon-free sources. Construction emissions will have a short- term negligible increase in greenhouse gases that contribute to climate change. The Project's design incorporates design elements that minimize impacts from the increase in extreme weather events such as increase flooding, storms, and heat wave events that are expected to accompany a warming climate.

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. It also encourages state leaders and policy makers to consider equity in our state's response to climate change.[145]

The Project design incorporates both current and projected future climate conditions specific to the Project site. LFP 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, BESS enclosures are equipped with temperature regulation systems. These systems may include liquid or air cooling mechanisms, as well as passive strategies such as natural convection, to ensure safe and reliable thermal management during

[145] MPCA. 2020. Annual Report to the Governor on the Climate Change Executive Order. https://climate.state.mn.us/sites/climate-action/files/2021-01/ClimateChangeSubcabinetReport_2020_cc-mn3-01.pdf. Accessed January 2026.

operation.[146] See Section 3.3.5 for information on BESS enclosure safety systems.

Foundations and support structures will be designed for local frost depth, snow load, wind, and seismic criteria defined by the Minnesota State Building Code and the American Society of Civil Engineers 7-16 Minimum Design Loads for Buildings and Other Structures. Collectively, these design standards and embedded system parameters will validate that the BESS Facility can safely operate under expected climatic stressors and temperature fluctuations.

During construction, the Applicant will implement BMPs to minimize emissions, and fugitive dust. These practices will include reducing vehicle and equipment speeds, maintaining equipment and exhaust systems, limiting idling, watering or treating haul and access roads, stabilizing and covering stockpiles, protecting exposed soils, and containing excavated materials. The Applicant will obtain an NPDES/SDS CSW General Permit and prepare a SWPPP prior to construction.

6.7.9.1 Existing Environment

Data on historic and projected future temperature and precipitation were obtained from the DNR Climate Explorer tool[147] for Washington County. Climate variables reviewed included average annual temperature and annual precipitation indices using data from 1895-2025. Some of the climate projections summarized below use Representative Concentration Pathways (RCPs), which are GHG scenarios used by the Intergovernmental Panel on Climate Change. RCP 4.5 is an intermediate scenario in which emissions decline after peaking around 2040, and RCP 8.5 is a worst-case scenario in which emissions continue to rise through the 21st century.[148]

Temperature

The mean temperature in the county between 1895-2025 was approximately 43.92°F, with the lowest average temperature in 1917 (39.31°F) and the highest average temperatures in 2012 (48.93°F). The model estimated the average annual temperature increased by 0.21°F per decade.[149]

The average annual temperature in Washington 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 49.03°F.[150]

LFP BESS batteries and systems operate in an optimal temperature range, which varies slightly by model. External environmental and climatic conditions are accounted for by including temperature moderation systems, such as liquid or air cooling or natural convection, that regulate heat within the BESS enclosure.[151] Given the temperature ranges in the Project Site, an appropriate temperature moderation system will be installed in the enclosures to ensure consistent and efficient operation of the batteries. Similarly, the exterior

146 Mdachi, N. K., and C. Choong-Koo. 2024. Comparative Review of Thermal Management Systems for BESS. Batteries 10 (7): 224. https://doi.org/10.3390/batteries10070224.

147 DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

148 DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

149 DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

150 DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

151 Mdachi, N.K. and C. Choong-Koo. 2024. Comparative review of Thermal Management Systems for BESS. *Batteries* 10(7), 224. https://doi.org/10.3390/batteries10070224

and foundation components of the BESS enclosures will be selected to withstand the current and anticipated environmental conditions of the region where the Project is located.

Precipitation

The mean precipitation over the same 1895-2025 period was 29.73 inches annually, with the lowest precipitation in 1910 (12.06 inches) and the highest precipitation in 1975 (41.27 inches). On average, precipitation has increased by 0.34 inch per decade.[152]

The average annual precipitation in Washington 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 33.2 inches.

Other Climate Conditions

BESS has demonstrated this important function specifically in Texas during extreme winter storms when BESS facilities withstood the extreme conditions and continued to provide power into the grid. It has been reported that during the January 2024 winter freeze, BESS units saved an estimated $750 million in day-ahead market costs by fulfilling essential ancillary services and freeing up to 3GW of gas generation to meet critical energy needs and reduce prices. Throughout the summer and especially on September 6th, 2023, amid extreme summer heat and surging power demand, batteries kept the lights on and averted an emergency load-shedding event by dispatching a peak of 2 gigawatts of power when Electric Reliability Council of Texas reserves were lowest.[153]

The EPA Climate Resilience Evaluation and Awareness Tool Climate Scenarios Projection anticipates an increase in 100-year storm intensity of 13.4% in 2035 and 26.1% in 2060 for the Project Site.[154] This indicates that the Project Site may see more intense storms in the future.

According to the FEMA National Risk Index, Washington County, Minnesota, has a Risk Index score of 83.87, putting it in the Relatively Moderate risk category.[155] The Risk Index and Expected Annual Loss ratings are Relatively Moderate, Social Vulnerability is Very Low, and Community Resilience is Very High. The Very High rating for Community Resilience indicates the community can likely recover from natural hazards. Individual hazard ratings in Washington County are listed in Table 6.7-6.

Table 6.7-6: FEMA National Risk Index Hazard Ratings in Washington County

Hazard	Rating Category	Score
Strong Wind	Very High	98.25
Tornado	Relatively High	94.37
Hail	Relatively High	94.82
Lightning	Relatively High	88.42

[152] DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

[153] Aurora Energy research. 2024. Role of Battery Energy Storage Systems (BESS) in the ERCOT Market. 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/.

[154] EPA. 2022. Climate Resilience Evaluation and Awareness Tool. V. 3.0. https://www.epa.gov/crwu/climate-resilience-evaluation-and-awareness-tool. Accessed January 2026.

[155] FEMA. Resilience Analysis and Planning Tool (RAPT) - Production. https://experience.arcgis.com/experience/0a317e8998534c30a9b2d3861c814d42/.

Hazard	Rating Category	Score
Cold Wave	Relatively Moderate	87.50
Inland Flooding	Relatively Moderate	83.49
Heat Wave	Relatively Moderate	80.35
Winter Weather	Relatively Moderate	76.64
Landslide	Relatively Low	72.61
Earthquake	Very Low	13.30
Drought	Very Low	12.95

6.7.9.2 Potential Impact of Climate Change on Project

According to the DNR, 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.[156]

The preliminary design of the Project has accounted for current and expected future climate conditions in the Project Site. The BESS and related facilities will be able to withstand potential weather events that would reasonably be expected to occur at the Project Site. The Applicant will purchase equipment designed to ensure the highest level of operability reliability across the range of anticipated environmental conditions for the lifetime of the Project such as temperature, precipitation, wind, mechanical loading, etc.

6.7.9.3 Potential Impacts

The ROI for climate change is the Region. The models generally predict that the county will see more precipitation and warmer average, maximum, and minimum temperatures (Table 6.7-7). The mid-century (2040–2059) calculation is more relevant to the Project, given the 25-year operational life of the Project. The late-century (2080-2099) calculations are more relevant to the Project if repowered after the 25-year expected life.

Table 6.7-7: Historic and Projected Future Temperature and Precipitation Levels

Modeled Timeframes for Washington County*	Average Temperature Mean (°F)	Minimum Temperature Mean (°F)	Maximum Temperature Mean (°F)	Precipitation Mean (in)
1895-2025	43.92	34.01	53.81	29.73
2040–2059 Mid-Century (RCP 4.5)	49.03	42.24	56.08	33.20
2080–2099 Late-Century (RCP 4.5)	51.44	45.04	58.18	33.61
2080–2099 Late-Century (RCP 8.5)	54.87	49.21	61.65	36.22
* The projected future temperatures and precipitation are based on January – December, Mean Model.				

6.7.9.4 Mitigation Measures

The stormwater collection basins installed at the Project will be sized appropriately and will meet state and county requirements for reducing runoff rates and providing the required treatment. Moderate grading and the use of swales and diversion berms may also be used to prevent flooding of infrastructure and route water

[156] DNR. Minnesota Climate Trends. https://arcgis.dnr.state.mn.us/ewr/climatetrends/. Accessed January 2026.

to the proposed basins. The existing drainage patterns will be maintained, and the increase in perennial vegetation within the Project is expected to maintain the uptake of water on-site and slow and reduce runoff. The structural, civil, and electrical works will comply with all applicable local and state building codes, in addition to codes and standards set by national standards-developing organizations. The preliminary design safety factor used on snow and wind loads (to de-risk extreme weather events) will be based on recommendations from these standards. Similarly, the final system components and pad sizes and depths will meet building codes for wind and snow loads. The BESS enclosures selected for the Project will be designed to withstand wind, flood, blizzard, and hail events. BESS systems can help offset power loss during extreme weather by dispersing stored power while energy producing facilities are down. The Applicant also intends to provide opportunities for training emergency responders to ensure the local response teams are prepared for extraordinary events at the Project Site (see Section 6.4.6 for additional discussion surrounding emergency services).

BESS 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 certain times of the day, resulting in curtailment, the reduction of energy production from what it could be producing.

BESS infrastructure can reduce curtailment of renewable generation resources and maximize renewable contributions to the grid. BESS 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 also reduce the need for and minimizes the proliferation of additional transmission infrastructure that would otherwise be required if new generating facilities would be needed to provide the demand and frequency benefits the Project is providing.

6.8 Unavoidable Impacts

Resource impacts are unavoidable when an impact cannot be avoided even with mitigation strategies. Preliminary design of the Project avoids impacts to environmental resources whenever possible. In some cases, impacts to environmental resources could not be entirely avoided but will be minimized by implementation of mitigation measures. A detailed discussion of the environmental impacts of the proposed Project, as well as the mitigation measures that would be used to minimize impacts, is presented in sections 6.4 through 6.10 of the Application. Environmental impacts that will be minimized by the use of mitigation measures, but not entirely avoided, are provided below. Most of these unavoidable impacts will occur during construction of the Project and will resolve with the completion of construction.

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

- Noise emitted from vehicles and equipment during construction that will be audible to neighboring landowners;
- Increased traffic on roads within and surrounding the Project Site;
- Air emissions from the exhaust of diesel and gasoline-powered equipment and vehicles;

- Minor air quality impacts due to fugitive dust;
- Potential for soil erosion, and
- Potential disturbance to, and displacement of, some species of wildlife.

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

- Introduction of additional industrial facilities in an industrial area, which will be visible from local roadways and neighboring landowners;
- Noise emitted by the operation of the Project;
- Creation of new impermeable surface for the BESS enclosure area, parking area, substation and access roads; and
- Changes to stormwater infrastructure with the addition of the storm sewer inlet and basins along the west side of the Project Site.

6.9 Irreversible and Irretrievable Resource Commitments

Irreversible and irretrievable resource commitments are primarily related to project construction, including the use of water, aggregate, hydrocarbons, steel, concrete, wood, and other consumable resources. Some, like fossil fuel use, are irretrievable. Others, like water use, are irreversible. Still others might be recyclable in part, for example, the raw materials used to construct batteries and enclosures would be an irretrievable commitment of resources, excluding those materials that may be recycled at the end of useful life. The commitment of labor and fiscal resources to develop, construct, and operate the Project is considered irretrievable.

Land required for the Project would be committed to hosting BESS enclosures and associated facilities for the life of the Project, which is expected to be up to 25 years. Although the entire 6.8-acre Project Site would not be developed, the 3.3 acres of land within the Preliminary Development Area would consist of permanent Project 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 return the site to its current condition, the land would again be available for other uses.

6.10 Cumulative Potential Impacts

Minn. R. 4410.0200, subp. 11(a), defines “cumulative potential effects” as the “effect on the environment that results from the incremental effects of a project in addition to other projects in the environmentally relevant area that might reasonably be expected to affect the same environmental resources, including future projects actually planned or for which a basis of expectation has been laid, regardless of what person undertakes the other projects or what jurisdictions have authority over the projects.”

MPUC EIP staff have recently defined the “environmentally relevant area” as locations where the potential effects of the project coincide with the potential effects of other projects to impact the elements studied in Section 6.0 (Environmental Assessment). Generally, this area includes the ROI for the different resource

elements.[157]

The Applicant searched for reasonably foreseeable projects in both temporal and spatial proximity to the Proposed Project. A review of the Minnesota Environmental Quality Board website[158] did not reveal any projects proposed with similar timing or within close proximity to the Project Site that would be expected to interact negatively or create significant cumulative impacts with the proposed Project. A review of the MPUC's Minnesota Wind Farm and Solar Projects database also did not reveal any projects within close proximity to the Project.[159]

In addition, the Applicant reviewed Cottage Grove's Development Map and construction projects website,[160, 161] the Washington County website,[162] MnDOT's Metro District website,[163] and the Metropolitan Council's Planned Functional Class Roads web viewer.[164] The Project Site and surrounding area are also mapped as "Industrial" on the future land use map provided in the City of Cottage Grove Comprehensive Plan.[165]

According to the MISO Generator Interconnection Queue, there are two energy storage projects in Washington County – one active BESS project (the proposed Project) and one withdrawn BESS project.[166] Table 6.10-1 summarizes the current and reasonably foreseeable future projects. The Applicant does not anticipate combined impacts from the proposed Project and the other Projects listed in Table 6.10-1. The County Highway 19 and 80th Street Intersection Improvement and County Highway 20 Improvement Project are located north of the Project and US Highway 10. The Venture Collection at Graymont Village and Cottage Grove Logistics Park projects are located west of the proposed Project. While there could be minor impacts to traffic during construction of the nearby projects to the west, these impacts would likely be negligible. Cumulative environmental impacts with the nearby projects are not anticipated as the proposed Project is within an existing industrial area and only minor environmental impacts are likely to occur.

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157 In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for an up to 135.5 MW Battery Energy Storage System Site Permit for the Blue Lake Battery Energy Storage Project in Scott County, Minnesota. Environmental Assessment Scoping Decision (202512-225963-01).

158 EQB. Environmental Review Projects. https://pca-gis02.pca.state.mn.us/EQB/. Accessed February 2026.

159 MPUC. Minnesota Wind Farm and Solar Projects. https://minnesota.maps.arcgis.com/apps/webappviewer/index.html?id=af93f569169a435cbe07f741c340fedb. Accessed February 2026.

160 Cottage Grove. Development Map. https://experience.arcgis.com/experience/de9bf4575ec048a49703fb3fe61161f4. Accessed February 2026.

161 Cottage Grove. Street Projects. https://www.cottagegrovemn.gov/223/Construction-Projects. Accessed February 2026.

162 Washington County. Transportation Projects. https://www.washingtoncountymn.gov/474/Transportation-Projects. Accessed February 2026.

163 MnDOT. Twin Cities Regional Information. Construction Projects, Plans, and Studies. https://www.dot.state.mn.us/metro/projects.html. Accessed February 2026.

164 Metropolitan Council. Roadway Functional Class Review. Functional Class Roads – Planned. https://metrocouncil.maps.arcgis.com/apps/webappviewer/index.html?id=4e02270f13944fe1b9f600123e29618a. Accessed February 2026.

165 Cottage Grove. 2020. Comprehensive Plan | Cottage Grove, MN. https://www.cottagegrovemn.gov/200/Comprehensive-Plan.

166 MISO. 2026. Current Queue Activity Interactive Map. https://cloud.cartovista.com/miso/ferc/current-queue-map. Accessed February 2026.

Table 6.10-1: Other Projects in Close Proximity and Timeframe

Project	General Project Location	Anticipated Timeframe	Project Type
County Highway 19 and 80th Street Intersection Improvement	Keats Avenue and 80th Street Cottage Grove, Minnesota	Construction begins 2026	Road Project
County Highway 20 Improvement Project	Jamaica Avenue between Military Road and 70th Street South Cottage Grove, Minnesota	Summer 2028	Road Project
The Venture Collection at Graymont Village	Ideal Avenue South and 100th Street South Cottage Grove, Minnesota	2026 and later	Residential Development
Cottage Grove Logistics Park	Ideal Avenue South and 100th Street South Cottage Grove, Minnesota	2026 partially constructed	Industrial Development
The Cottage Grove BESS Project (J2879)	The Project Site, Washington County	2027-2028	Battery Storage
Xcel Energy (J3312)	Cottage Grove Drive and Dale Road, Washington County	Withdrawn	Battery Storage