Appendix A Maps

Appendix A

Maps

Louise Solar Project
Mower County, Minnesota

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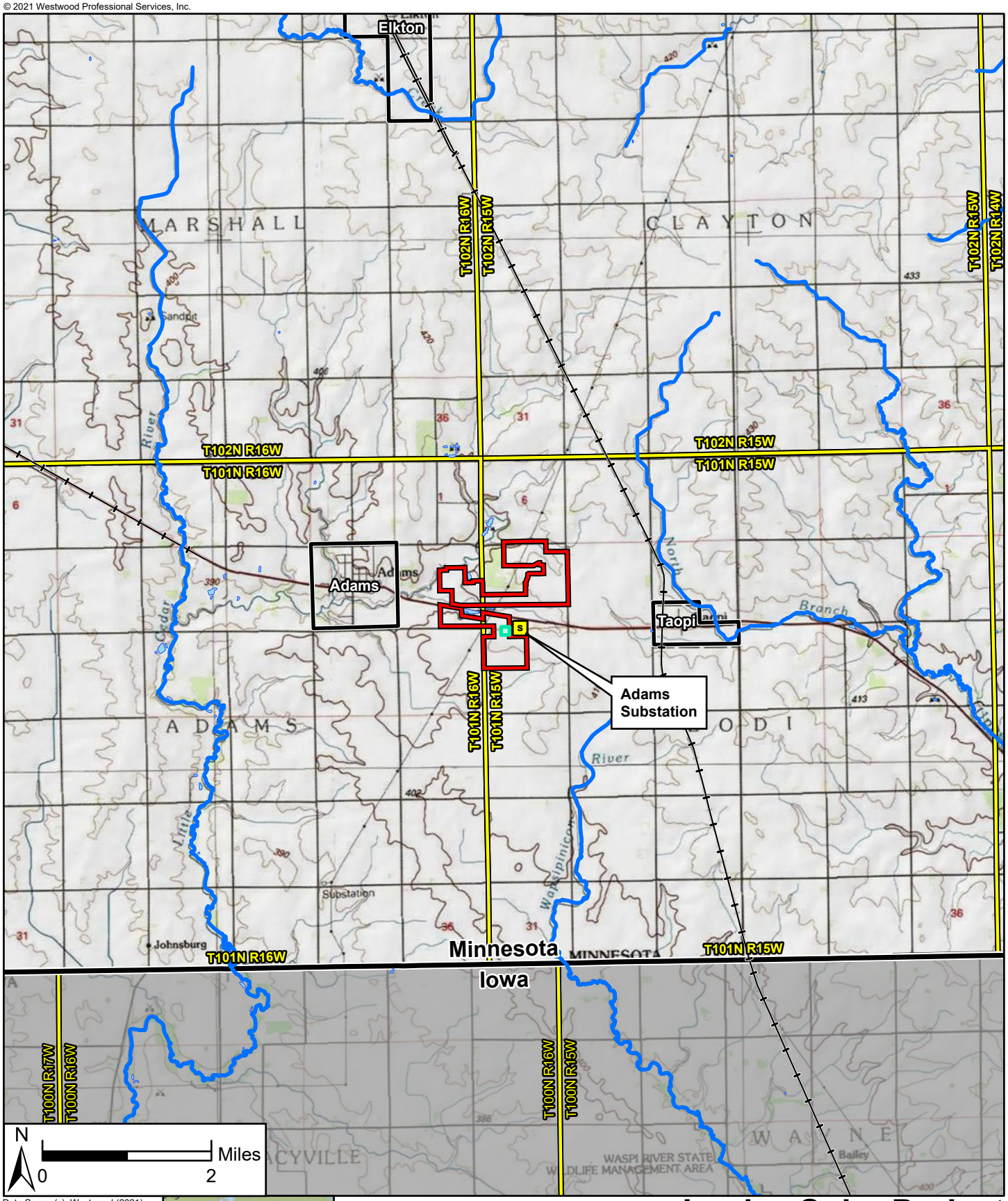

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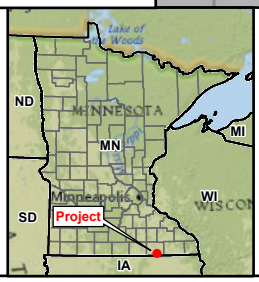

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Legend

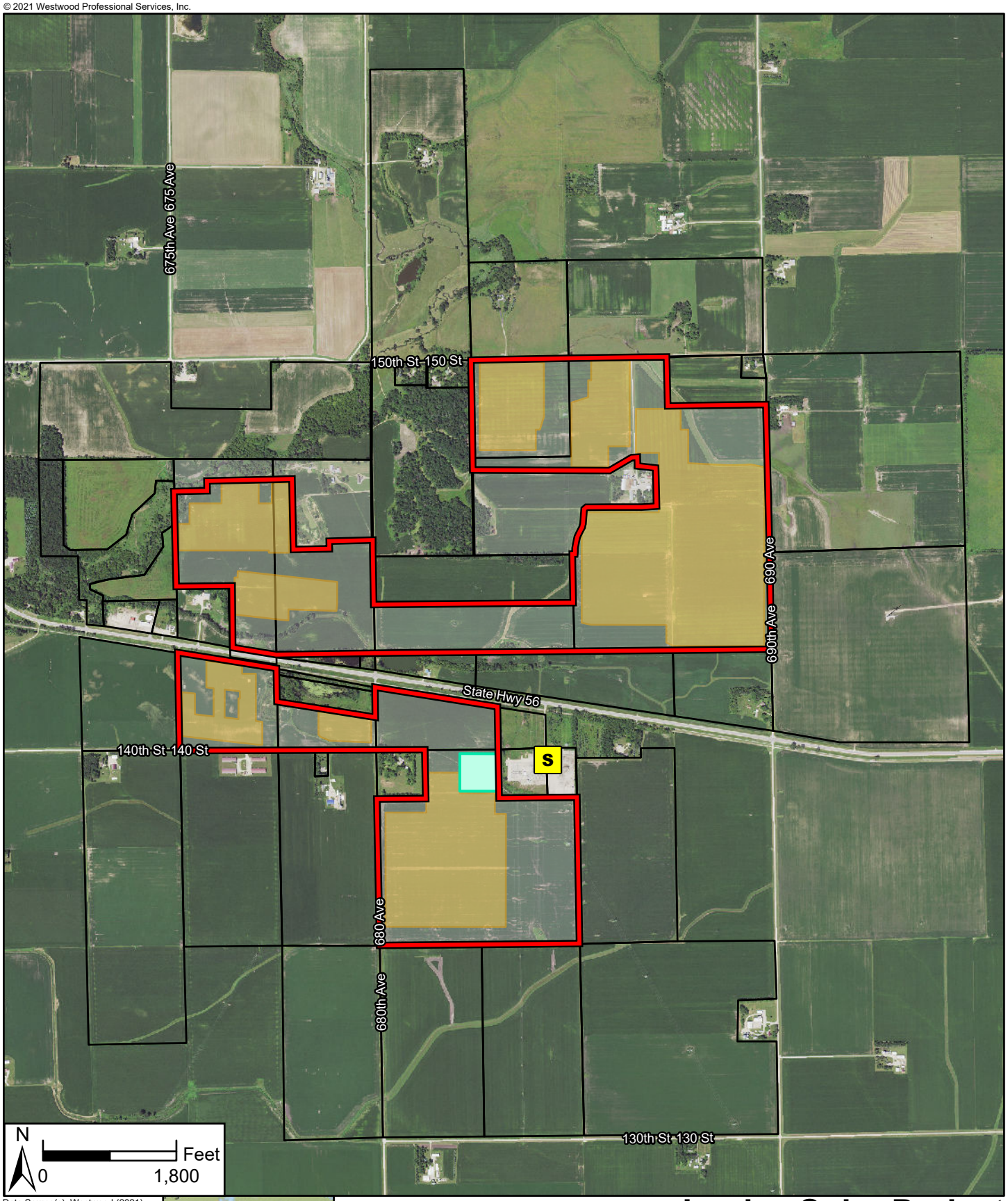
- Project Area Boundary
- Project Substation
- Existing Substation
- NHD Flowline
- NHD Waterbody
- Railroad
- Municipal Boundary
- County Boundary
- State Boundary
- PLS Township Boundary

Louise Solar Project

Mower County, Minnesota

Project Location

MAP 1



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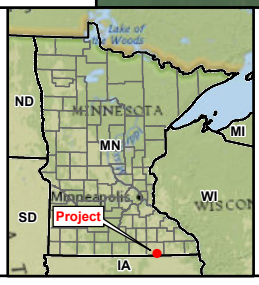

Legend

- Project Area Boundary
- Participating Parcel
- Non-Participating Parcel
- Project Substation
- S Existing Substation
- Preliminary Development Area
- Road
- County Boundary
- Municipal Boundary

Louise Solar Project

Mower County, Minnesota

Land Control and Development Areas

MAP 2

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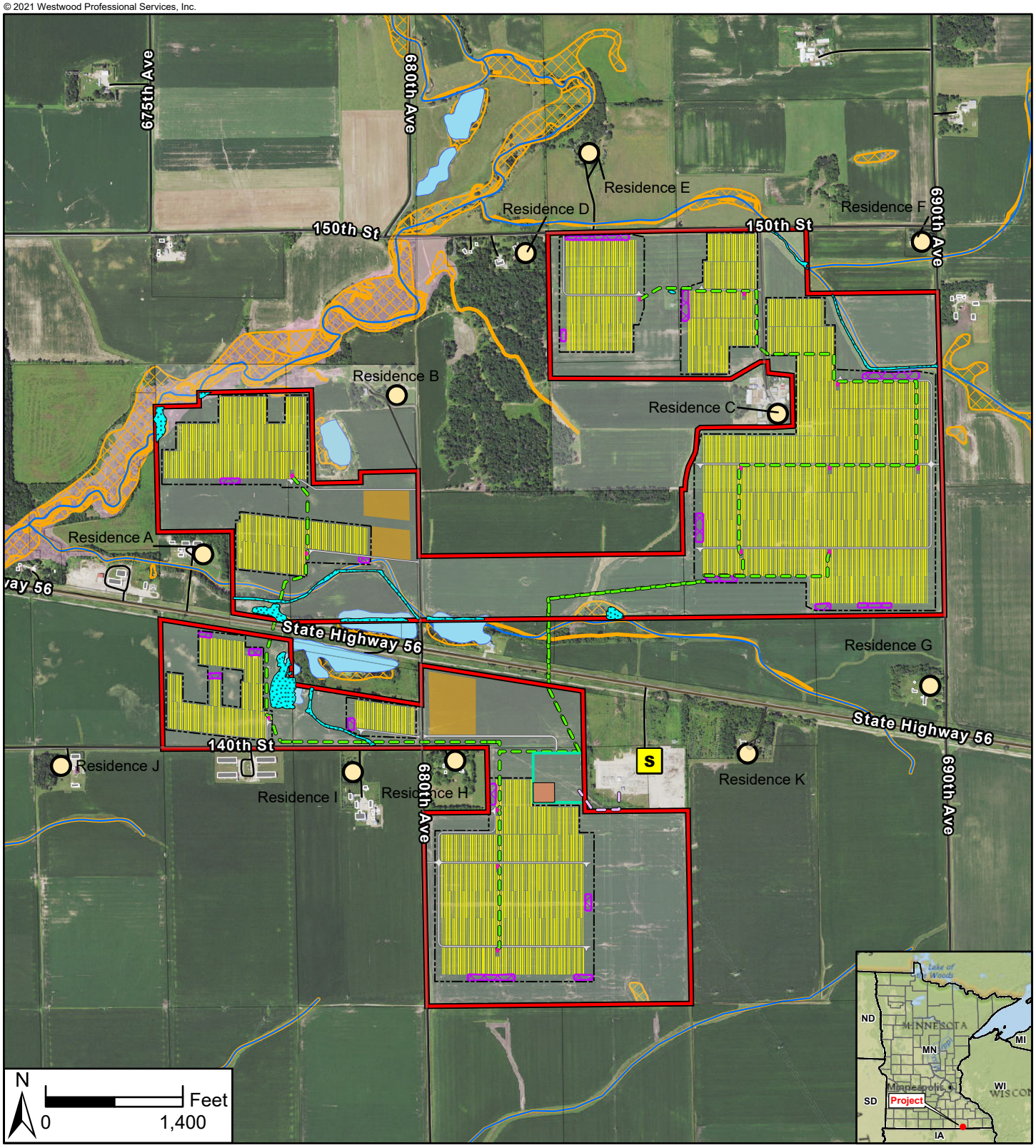
Map Document: N:\00141192.01\GIS\ArcPro\Louise Solar Permit Maps\Louise Solar Permit Maps.aprx 1/26/2021 12:53 PM bmhardel



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Legend

- Project Area Boundary
- Project Substation
- Proposed O&M Building
- Existing Substation
- Solar Array
- Inverter
- Proposed Transmission Line
- Proposed Collection
- Adjacent Residence
- Building Footprint
- Proposed Access Road
- Proposed Fence
- Laydown Yard
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- FEMA Flood Zones
- NHD Flowline
- NHD Waterbody
- Field Delineated Wetland
- NWI Wetland
- Road
- County Boundary
- Municipal Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 3

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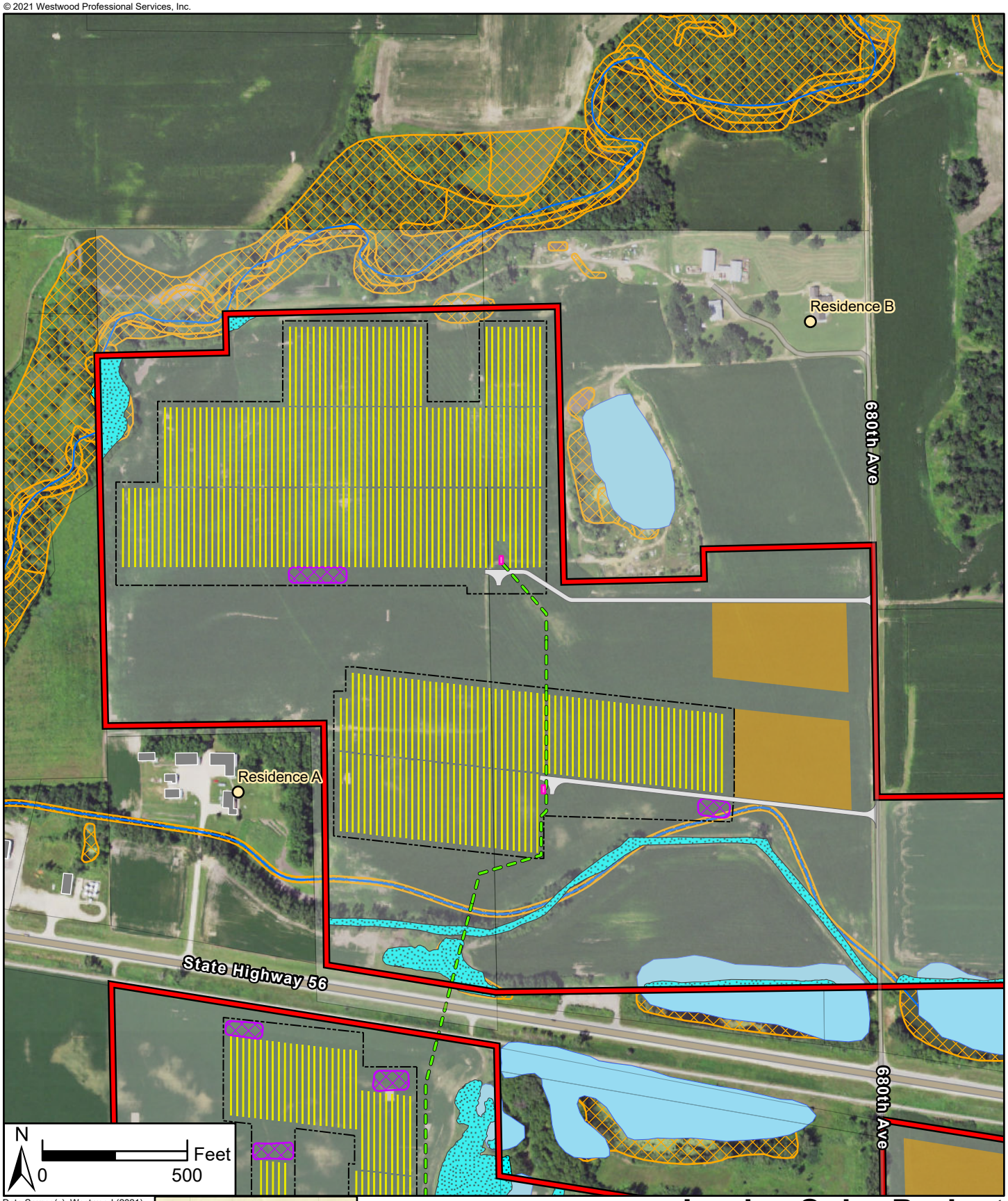

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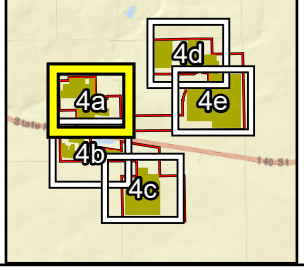

Legend

- Solar Array
- Inverter
- Adjacent Residence
- Building Footprint
- Proposed Access Road
- Proposed Fence
- Laydown Yard
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- NHD Flowline
- NHD Waterbody
- Field Delineated Wetland
- NWI Wetland
- County Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 4a

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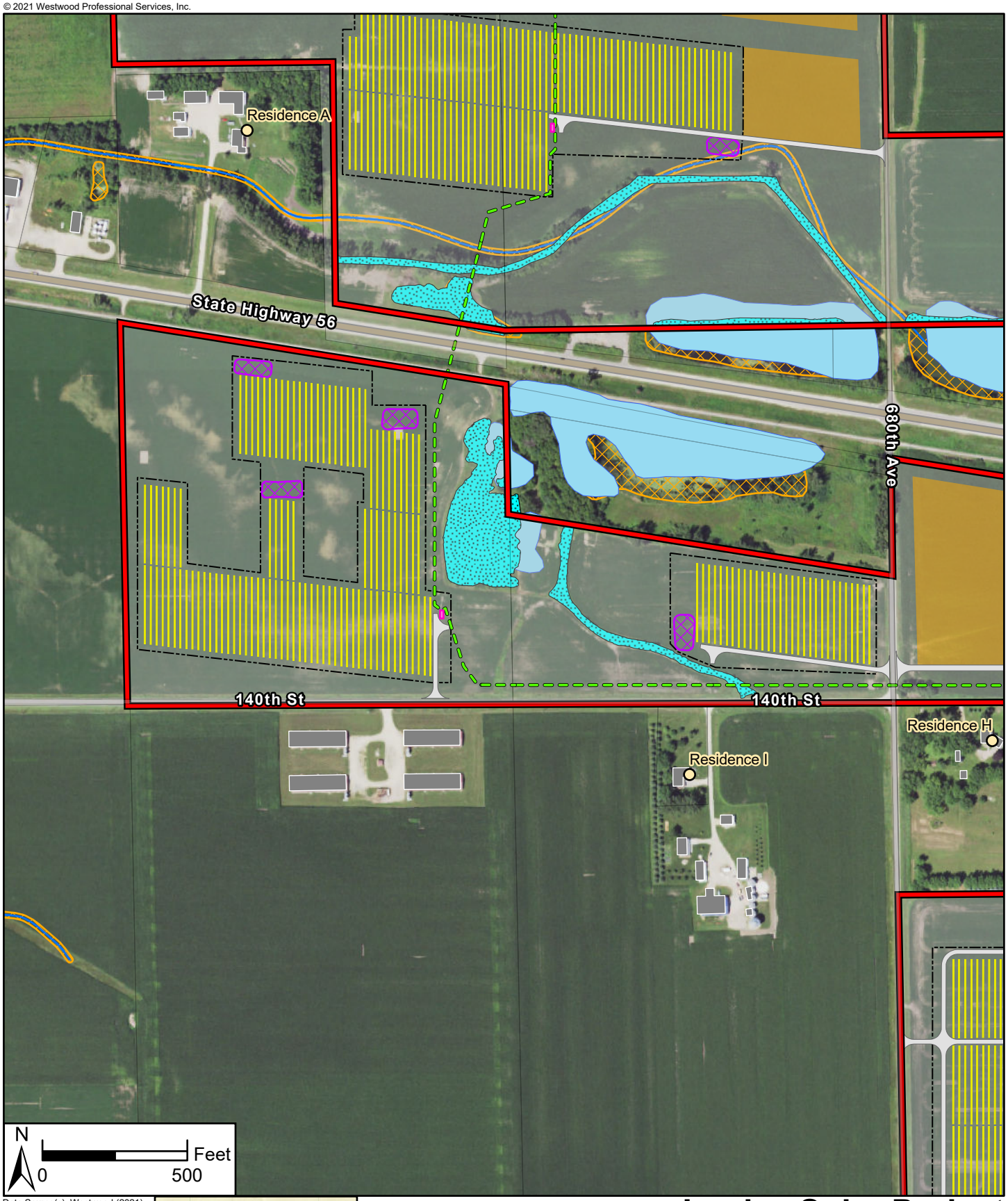

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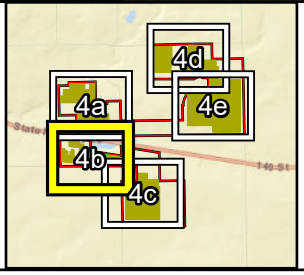

Legend

- Solar Array
- Inverter
- Adjacent Residence
- Building Footprint
- Proposed Access Road
- Proposed Fence
- Laydown Yard
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- NHD Flowline
- NHD Waterbody
- Field Delineated Wetland
- NWI Wetland
- County Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 4b

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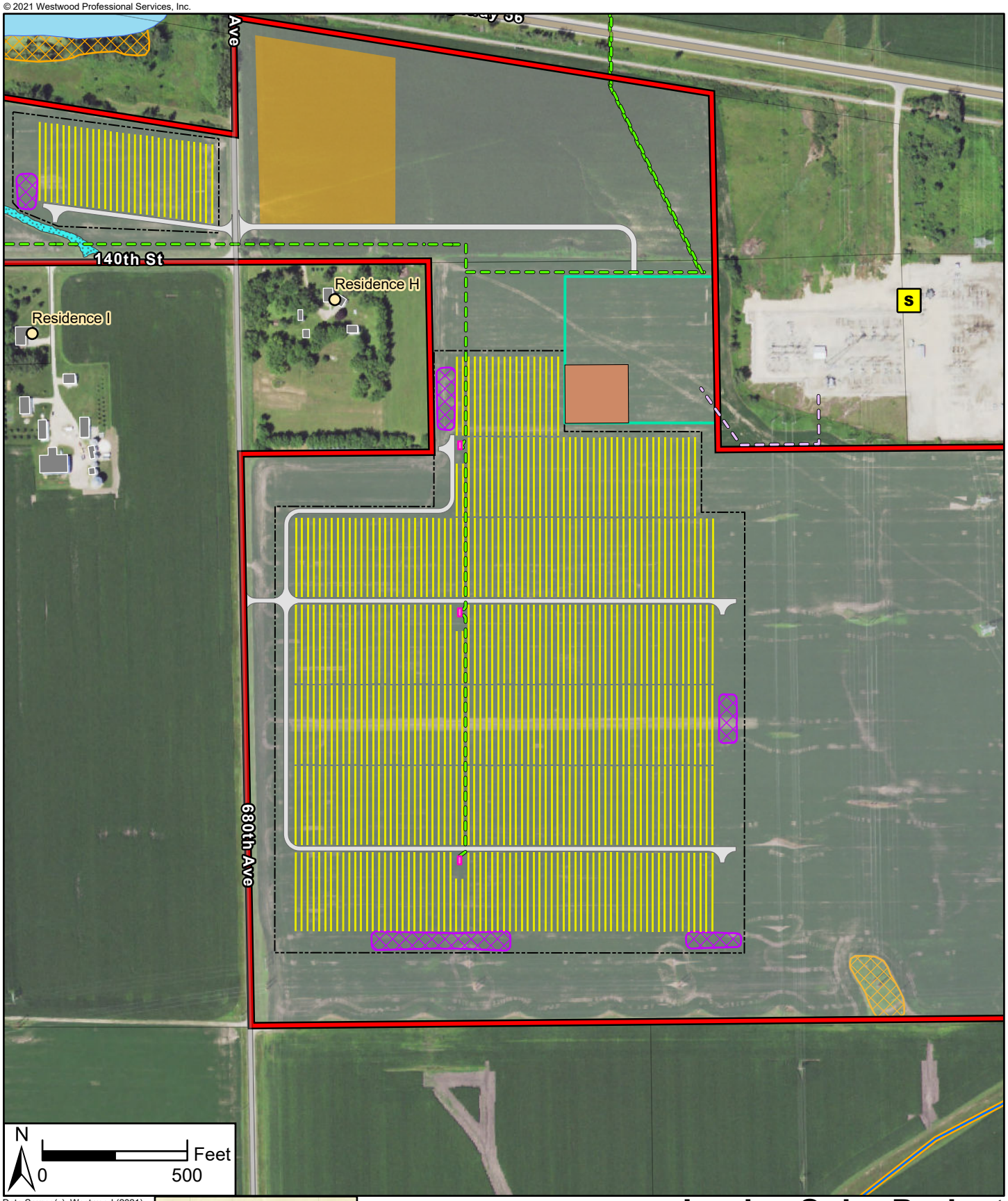

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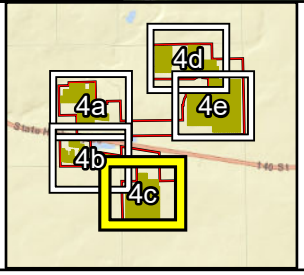

Legend

- Existing Substation
- Proposed O&M Building
- Project Substation
- Solar Array
- Inverter
- Proposed Transmission Line
- Adjacent Residence
- Building Footprint
- Proposed Access Road
- Proposed Fence
- Laydown Yard
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- NHD Flowline
- NHD Waterbody
- Field Delineated Wetland
- NWI Wetland
- County Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 4c

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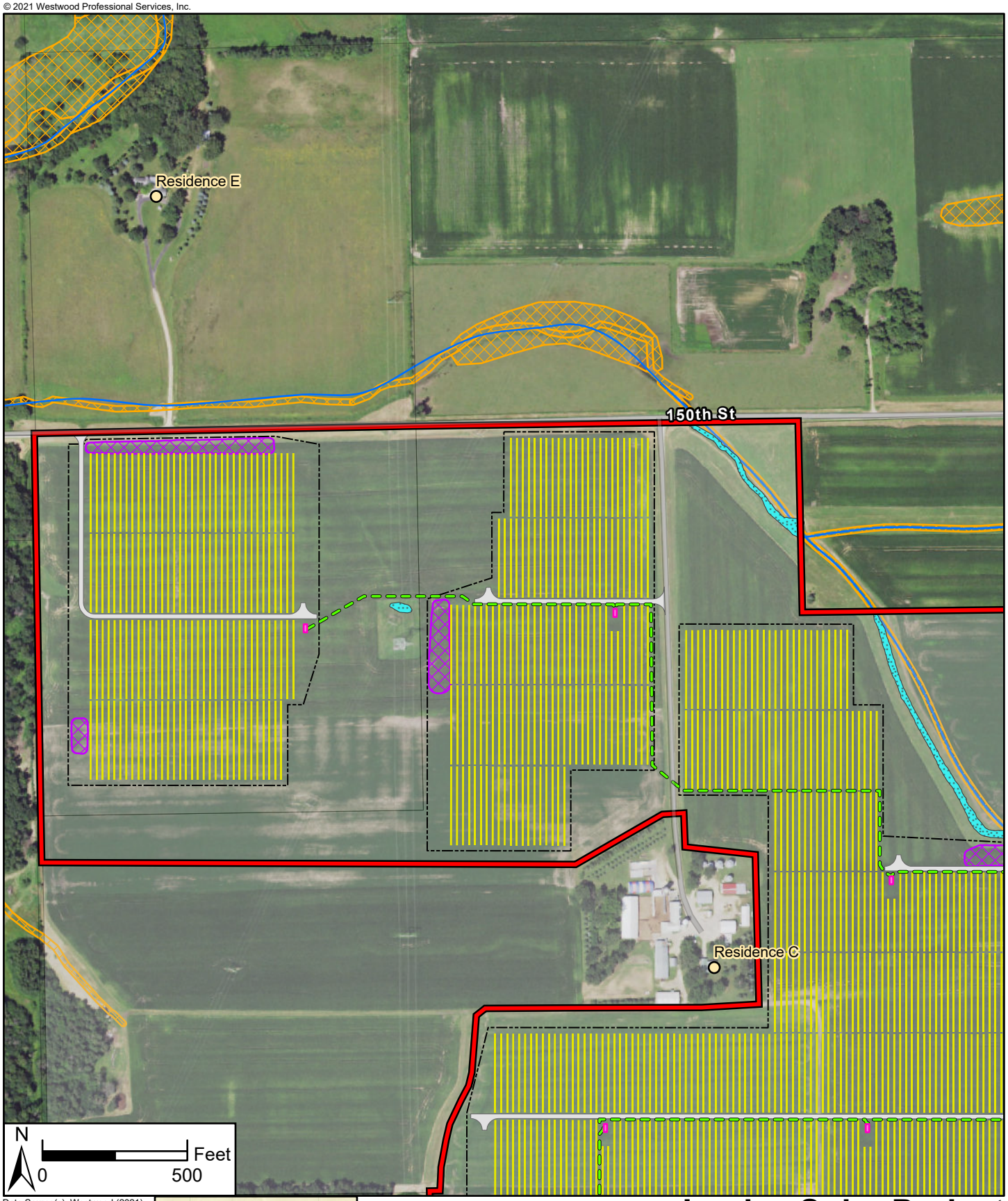

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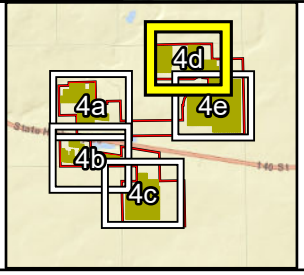

Legend

- Solar Array
- Inverter
- Adjacent Residence
- Proposed Access Road
- Proposed Fence
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- NHD Flowline
- Field Delineated Wetland
- NWI Wetland
- County Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 4d

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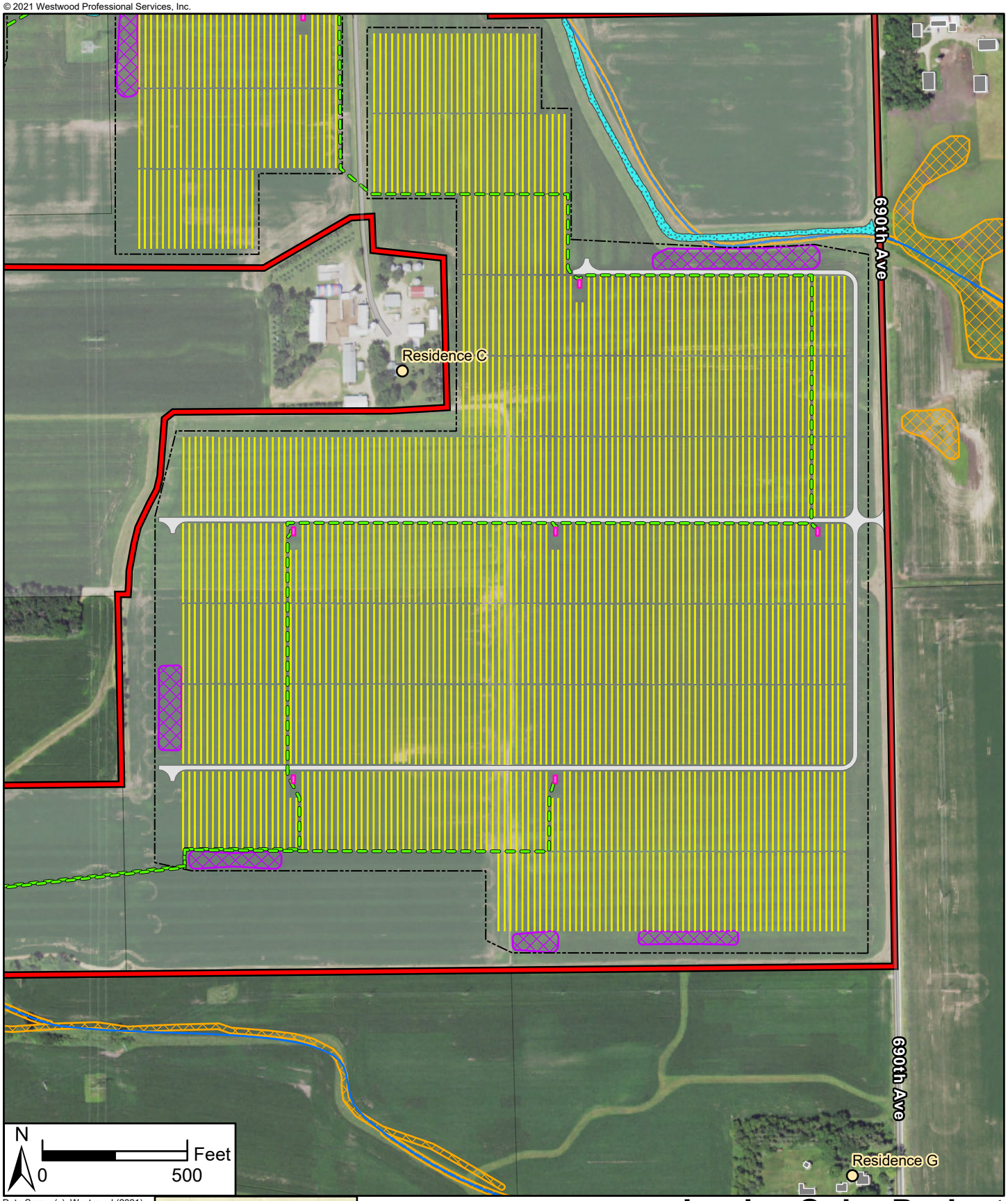
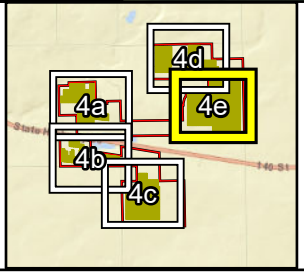


Data Source(s): Westwood (2021); MNDNR (Various Dates); US Census Bureau (2019); NED (2016); Ducks Unlimited, and St. Mary's University of Minnesota (2015); USGS NHD Dataset (2013); USFWS NWI (2017); USGS (2019, 2017).



Legend

- Solar Array
- Inverter
- Adjacent Residence
- Building Footprint
- Proposed Access Road
- Proposed Fence
- Stormwater Pond
- Participating Parcel
- Non-Participating Parcel
- NHD Flowline
- Field Delineated Wetland
- NWI Wetland
- County Boundary

Louise Solar Project

Mower County, Minnesota

Preliminary Project Layout

MAP 4e

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Appendix B Scoping Decision

COMMERCE DEPARTMENT

In the Matter of the Applications of
Louise Solar, LLC, for a
Certificate of Need and Site Permit for the
50 MW Louise Solar Project in
Mower County, Minnesota

Environmental Assessment
Scoping Decision

Docket No. IP7039/CN-20-646
Docket No. IP7039/WS-20-647

The above matter is before the assistant commissioner of the Department of Commerce (Department) for a decision on the scope of the environmental assessment (EA) to be prepared for the Louise Solar Project (Project) proposed by Louise Solar, LLC (Applicant) in Mower County.

This scoping decision identifies topics for analysis in the EA.

On February 11, 2021 Louise Solar, LLC submitted a request for a certificate of need (CN) and a site permit application (SPA) to the Minnesota Public Utilities Commission (Commission) for the Louise Solar project. Louise Solar, LLC, is a wholly owned subsidiary of EDF Renewable, LLC.

The CN and SPA applications were accepted as complete by the Commission on May 7, 2021.[1] The Applicant expects the project to be operational by in Q4 2022 or Q4 2023 depending on construction timing.

Project Purpose and Description

The Applicant proposes to construct up to 50 MW solar facility in Mower County, Minnesota. Its primary components include photovoltaic panels affixed to a linear ground-mounted single-axis tracking system, inverters and transformers housed in electrical cabinets, electrical collection system, project substation, and SCADA systems and metering equipment. The project also requires fencing, access roads, laydown areas, weather stations, and an operation and maintenance facility. The project will interconnect to the electrical grid at the existing ITC Midwest Adams Substation through a new, 700-1,000 feet of 161 kV gen-tie transmission line.

The proposed project is located approximately one mile east of Adams and 1.3 miles west of Taopi, Minnesota in Lodi and Adams townships (**Figure 1**). The Applicant has secured site control for 613 acres of agricultural land for the proposed project. Final project design is expected to occupy approximately 325 acres or less. The soils in the project area are classified as prime farmland.[2]

The Applicant states the Project will "provide approximately 50 MW Alternating Current (AC) of capacity and roughly 112,593 megawatt hours (MWh) annually of reliable, deliverable on-peak energy. The power generated by the Project will be offered for sale to wholesale customers, including Minnesota utilities and cooperatives that have identified a need for additional renewable energy and capacity, and commercial and industrial customers that have set clean energy goals. According to the Environmental

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[1] Minnesota Public Utilities Commission *Order Accepting Applications as Complete Authorizing Joint Review and Taking Other Actions* (May 7, 2021). eDockets No. **20215-173981-01**.

[2] Application at page 11.

Protection Agency's (EPA's) Greenhouse Gas Equivalencies Calculator, Louise Solar will offset approximately 79,618 metric tons of $C0_2$, the equivalent of 9,187 homes' energy consumption for one year." [3]

The applicant has executed a Generator Interconnection Agreement (GIA) with MISO dated February 22, 2019. This interconnection will provide sufficient outlet to accommodate all the solar energy generation from the project.[4]

Regulatory Background

The project requires a site permit from the commission.[5] Because the project is powered by solar energy it qualifies for the alternative permitting process.[6] Applicants must provide the commission with written notice of their intent to file an application under the alternative permitting process,[7] which was provided December 10, 2020.[8]

A certificate of need (CN or certificate) is also required.[9] The applicant applied to the commission for a certificate on February 11, 2021.[10] The CN application is considered under the process outlined in Minnesota Statute 216B.243, and Minnesota Rules 7849.

Site Permit Application and Acceptance

Site permit applications must provide specific information.[11] This includes, but is not limited to, information about the applicant, descriptions of the project and site, and discussion of potential human and environmental impacts and possible mitigation measures.[12] Under the alternative permitting process an applicant is not required to propose alternative sites; however, if alternative sites were evaluated and rejected, the application must describe these sites and reasons for rejecting them.[13]

Upon receiving a site permit application, the commission may accept it as complete, reject it and advise the applicant of its deficiencies, or accept it as complete but require the applicant submit additional information.[14] If the commission determines the application is complete, environmental review begins.

[3] Application at Page 3.
[4] Ibid.
[5] Minn. Stat. 216E.03, subd. 1 (no person may construct a large electric generating plant without a site permit from the commission); Minn. Stat. 216E.01, Subd. 5 ("large electric power generating plant" shall mean electric power generating equipment and associated facilities designed for or capable of operation at a capacity of 50,000 kilowatts or more).
[6] Under the Alternative Review Process (Minnesota Statute 216E.04; Minnesota Rule 7850.2800-3900.
[7] Minn. R. 7850.2800, subp. 2.
[8] Louise Solar, LLC, Notice of Intent to File a Site Permit Under the Alternative Process, December 10, 2020. eDocket No. 202012-168926-01.
[9] Minn. Stat. 216B.243, subd. 2 (no "large energy facility" shall be constructed without issuance of a certificate of need); Minn. Stat. 216B.2421, subd. 2(1) ("large energy facility" means any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more).
[10] Louise Solar, LLC (February 11, 2021) *Application for a Certificate of Need*, eDockets No. 20212-170897-02,-02, -03, -04 (trade secret), -05, -06, -07; *see generally* eDockets No. IP-7039/CN-20-646.
[11] Minn. Stat. 216E.04, subd. 3; Minn. R. 7850.3100.
[12] Ibid.
[13] Ibid.
[14] Minn. R. 7850.3200.

The commission is required to make a permit decision within six months from the date an application is accepted.[15] This time limit may be extended up to three months for just cause or upon agreement of the applicant.[16]

Public Advisor

Upon acceptance of a site permit application the Commission must designate a public advisor.[17] The public advisor answers questions about the permitting process but cannot provide legal advice or act as an advocate for any person.

Advisory Task Force

The commission may appoint an advisory task force to aid in the environmental review process.[18] An advisory task force would assist Energy Environmental Review and Analysis (EERA) staff in identifying additional sites or particular impacts to evaluate in the EA.[19] If appointed, an advisory task force must include certain local government representatives.[20] The advisory task force expires upon completion of its charge or issuance of the scoping decision.[21]

Appointment of an advisory task force is not required. In the event no advisory task force is appointed, citizens may request one be created.[22] If such a request is made, the commission must make this determination at its next scheduled agenda meeting.[23]

Environmental Review

The alternative permitting process requires completion of an EA, which is prepared by EERA staff.[24] An EA contains an overview of the resources affected by the project, and discusses potential human and environmental impacts (*Factors Considered*)[25] and mitigation measures.[26] Under the alternative permitting process an EA is the only required state environmental review document.

EERA conducts public scoping meetings in conjunction with a public comment period to inform the content of the EA.[27] The commissioner of the Department of Commerce or designee (Assistant Commissioner) determines the scope of the EA,[28] and may include alternative sites suggested during the scoping process.[29]

[15] Minn. R. 7850.3900, subp. 1.
[16] Ibid.
[17] Minn. R. 7850.3400.
[18] Minn. Stat. 216E.08, subd. 1; Minn. R. 7850.3600, subp. 1.
[19] Minn. R. 7850.2400, subp 3.
[20] Minn. Stat. 216E.08, subd. 1.
[21] Minn. R. 7850.2400, subp. 4.
[22] Minn. R. 7850.2400, at subp. 2.
[23] Ibid.
[24] Minn. Stat. 216E.04, subd. 5; Minn. R. 7850.3700, subp. 1.
[25] Minn. R. 7850.4100.
[26] Minn. Stat. 216E.04, subd. 5; Minn. R. 7850.3700, subp. 4.
[27] Minn. R. 7850.3700, subp. 2.
[28] Id. at subp. 3.
[29] Id. at subp. 2.

Certificate of Need and Joint Environmental Review

CN applications are subject to environmental review. EERA staff must prepare an environmental report for the project.[30] The report contains "*information on the human and environmental impacts of the* [*project*] *associated with the size, type, and timing of the project, system configurations, and voltage*."[31] It also contains information on alternatives to the project, as well as mitigation measures. The commission has 12 months to approve or deny a certificate of need from the date the application is filed.[32]

If an applicant applies for a site permit prior to completion of the environmental report, EERA may elect to prepare an EA in lieu of an environmental report. If so, the EA must include the content required by Minnesota Rule 7849.1500.

Public Hearing

The alternative permitting process requires a public hearing be held in the project area upon completion of the EA[33] in accordance with the procedures outlined in Minnesota Rule 7850.3800, subpart 3. If the site permitting process and CN determination are proceeding concurrently, the commission may order that a joint hearing be held to consider both siting and need.[34]

The hearing is presided over by an administrative law judge (ALJ) from the Office of Administrative Hearings (OAH). The commission may request the ALJ provide a summary of the hearing (summary report), or request the ALJ provide findings of fact, conclusions of law, and recommendations regarding the site permit application (summary proceeding). This hearing is not a contested case hearing and is not conducted under OAH Rule 1405.

Scoping Process Summary

Scoping is the first step in the environmental review process. Staff use the information gathered during scoping, in addition to the siting factors,[35] to focus the EA on the most relevant information needed to make informed decisions. Scoping includes a public meeting and comment period that provide opportunities for interested persons to help develop the scope of the EA.[36]

On May 10, 2021, the commission and Department issued a joint *Notice of Public Information and Environmental Assessment Scoping Meeting* and associated public comment period.[37] Notice was sent to those individuals on the project contact list and to potentially affected landowners. Minnesota Rule 7850.3700, subpart 3, requires commerce to determine the scope of the EA within 10 days after the close of the public comment period.

[30] Minn. R. 7849.1200.
[31] Ibid.
[32] Minn. Stat. 216B.243, subd. 5; Application at page 4 (the applicant anticipates the site permit decision to be made in summer 2020).
[33] Minn. R. 7850.3800, subp. 1.
[34] Minn. Stat. 216B.243, subd. 4 (stating that unless a joint hearing is not feasible or more efficient, or otherwise not in the public interest, a joint hearing shall be held).
[35] Minn. R. 7850.4100.
[36] Minn. R. 7850.3700, subp. 2.
[37] Public Utilities Commission (May 10, 2020) *Notice of Public Information and Environmental Assessment Scoping Meeting*, eDockets No. 20215-173997-01.

Public Meeting and Comment Period

Commission and EERA staff jointly held the public information and scoping meeting as noticed. The purpose of the meeting was to provide information and answer questions about the project and permitting process, and gather input regarding potential impacts and mitigative measures that should be studied in the EA. The meeting also provided an opportunity to solicit potential site or system alternatives. A court reporter was present to document verbal statements.

Due to Covid-19 procedures, the scoping meeting was held virtually, with web and phone access for participating. No members of the public or other interested parties participated in the on-line meeting.

A public comment period, ending June 9, 2021 provided an opportunity for interested persons to identify issues, mitigation measures, and site or system alternatives for study in the EA. Written comments were received from two state agencies and the applicant.

Agency Comments

Minnesota Department of Transportation (MnDOT) provided comments regarding site access from TH 56, the agency's Utility Accommodation Policy, and verifying stormwater run-off calculations for the project. MnDOT's comments are summarized below.[38] MnDOT notes that "any MnDOT permits applied for as a part of these projects will not be issued until the PUC has issued an approved site permit for this project."

- For any areas where the project intersects state highway rights of way, Louise Solar should adhere to MnDOT's Utility Accommodation Policy - MnDOT Accommodation Policy.
- Appendix A Maps 1-4 do not seem to illustrate new, direct site access from TH 56. New access to the proposed site via TH 56 is considered unnecessary given the availability of existing county and township roads currently accessible via TH 56 within/adjacent to the project area.
- MnDOT's District 6 Water Resources Engineer would like to see *and verify* storm water runoff calculations, including a summary table, showing that the Louise Solar Project will not be increasing peak runoff rate to MnDOT right of way.
- Any MnDOT land that Louise Solar may wish to occupy would need to be leased (in the areas where a lease is feasible) and any associated electrical collection systems *along* a trunk highway right of way would need to be permitted through a municipal, cooperative or investor owned electric service provider. MnDOT allows private parties to place connecting lines across trunk highway rights of way but does not allow private parties to place such facilities longitudinally along trunk highways.

Minnesota Department of Natural Resources (MDNR) commented on fencing of the site as relates to deer and the applicant's Vegetation Management Plan (VMP). MDNR's comments are summarized below.[39]

- To ensure complete deer exclusion from the solar facility, the *DNR's Fencing Handbook For 10 ft Woven Wire Deer Exclusion Fence* recommends 10-foot fencing and deer egress areas.

[38] MnDOT *Scoping Comments* (June 9, 2021). eDockets No. 20216-174922-01.
[39] MDNR *Scoping Comments* (June 8, 2021). eDockets No. 20216-174868-01.

- DNR, along with other relevant state agencies, expects to review the revised Vegetation Management Plan for the project prior to finalization.

The Applicant submitted comments to further develop the record on prime farmland, decommissioning, and the vegetation management plan.[40] Specifically, the applicant supplements the record with additional information on the prime farmland analysis and decommissioning as requested during application acceptance.[41] The revised VMP will be available for review and comment prior to the hearing.[42]

No site or system alternatives were recommended for study.

[40] Applicant *Scoping Comments* (June 9, 2021). eDockets No. 20216-174914-01.

[41] See *Order Accepting Applications as Complete Authorizing Joint Review and Taking Other Actions* (May 7, 2021). eDockets No. 20215-173981-01.

[42] Ibid.

Having reviewed the matter and consulted with department staff, I hereby make the following scoping decision in accordance with Minnesota Rule 7850.3700:

MATTERS TO BE ADDRESSED

The EA will describe the project and the human and environmental resources of the project area. It will provide information about potential impacts—both positive and negative—concerning the resources outlined in this scoping decision. The EA will describe mitigation measures that could reasonably be implemented to reduce or eliminate identified negative impacts. The EA will identify impacts that cannot be avoided and irreversible and irretrievable commitments of resources.

The EA will include the information that would have otherwise been required in an ER for a certificate of need by Minnesota Rule 7849.1500. This includes evaluating matters of size, type, and timing that would normally be excluded in an EA for a site permit application. The EA will describe and analyze the availability and feasibility of system alternatives, including a no-build alternative.

Data and analyses in the EA will be commensurate with the importance of potential impacts and the relevance of the information to consider mitigation measures. EERA staff will consider the relationship between the cost of data and analyses and the relevance and importance of the information in determining the level of detail to provide in the EA. Less important material may be summarized, consolidated, or simply referenced.

The EA will list information sources. If relevant information cannot be obtained within timelines prescribed by statute and rule, the costs of obtaining such information is excessive, or the means to obtain it is unknown, EERA staff will include in the EA a statement that such information is incomplete or unavailable and the relevance of the information in evaluating potential impacts or alternatives.

Staff will abbreviate analysis in the EA for resource topics determined to be of minor importance to the commission's decision in these dockets. *Abbreviated analysis* means that the resource topic will not be discussed in as much detail as the standard analysis. The decision whether to abbreviate analysis for certain resource topics will be made by EERA staff, and will be based on information from the site permit application, field visit(s), comments received, preliminary environmental analysis, and staff experience with similar projects.

The issues outlined below will be analyzed in the EA for the project. This outline is not intended to serve as a table of contents for the document itself.

Project Information
Purpose
Description (including perimeter fencing)
Location
Site Requirements Engineering and Design
Construction
Operation and Maintenance
Decommissioning
Cost

Regulatory Framework
Certificate of Need
Site Permit
Other Permits or Approvals
Environmental Review Process

Affected Environment, Potential Impacts, and Mitigative Measures
Human Settlement
Aesthetics
Cultural Values
Displacement
Electronic Interference
Land Use and Zoning
Noise
Public Health and Safety (including electric and magnetic fields, stray voltage)
Public Services and Infrastructure
Recreation
Socioeconomics (including property values)
Environmental Justice

Land Based Economies
Agriculture (including drainage infrastructure)
Forestry
Mining
Tourism

Archaeological and Historic Resources

Natural Environment
Air
Geology
Groundwater
Surface water, including storm water runoff and associated calculations
Rare and unique resources (including T&E species)
Soils, including prime farmland
Vegetation (including pollinator plants and vegetation management plan)
Wetlands (including stormwater control/designs)
Wildlife, including fencing
Wildlife habitat
Climate change and greenhouse gases

Alternatives to the Proposed Solar Project
The EA, in accordance with Minnesota Rule 7849.1500, will describe and analyze the feasibility of the following system alternatives, and the human and environmental impacts and potential mitigation measures associated with each.

- No-build Alternative

- 50 MW Solar Facility in a different location
- 50 MW Wind Facility

Unavoidable Impacts
The EA will discuss ways to mitigate potential impacts; however, even with mitigation strategies, certain impacts cannot be avoided. These unavoidable impacts will be listed.

Irreversible and Irretrievable Commitments of Resources
Resource commitments are irreversible when it is impossible or very difficult to redirect that resource to a different future use. An irretrievable commitment of resources means the resource is not recoverable for use by future generations. Irreversible and irretrievable commitments of resources will be listed.

ISSUES OUTSIDE THE SCOPE OF THE ENVIRONMENTAL ASSESSMENT

The EA will not consider the following:

- Any site alternative other than the site location proposed by the applicant.
- Any system alternative not specifically identified in this scoping decision, including demand side management; purchased power; facilities using a non-renewable energy source; upgrading existing facilities; and transmission rather than generation.
- Landowner compensation.

SCHEDULE

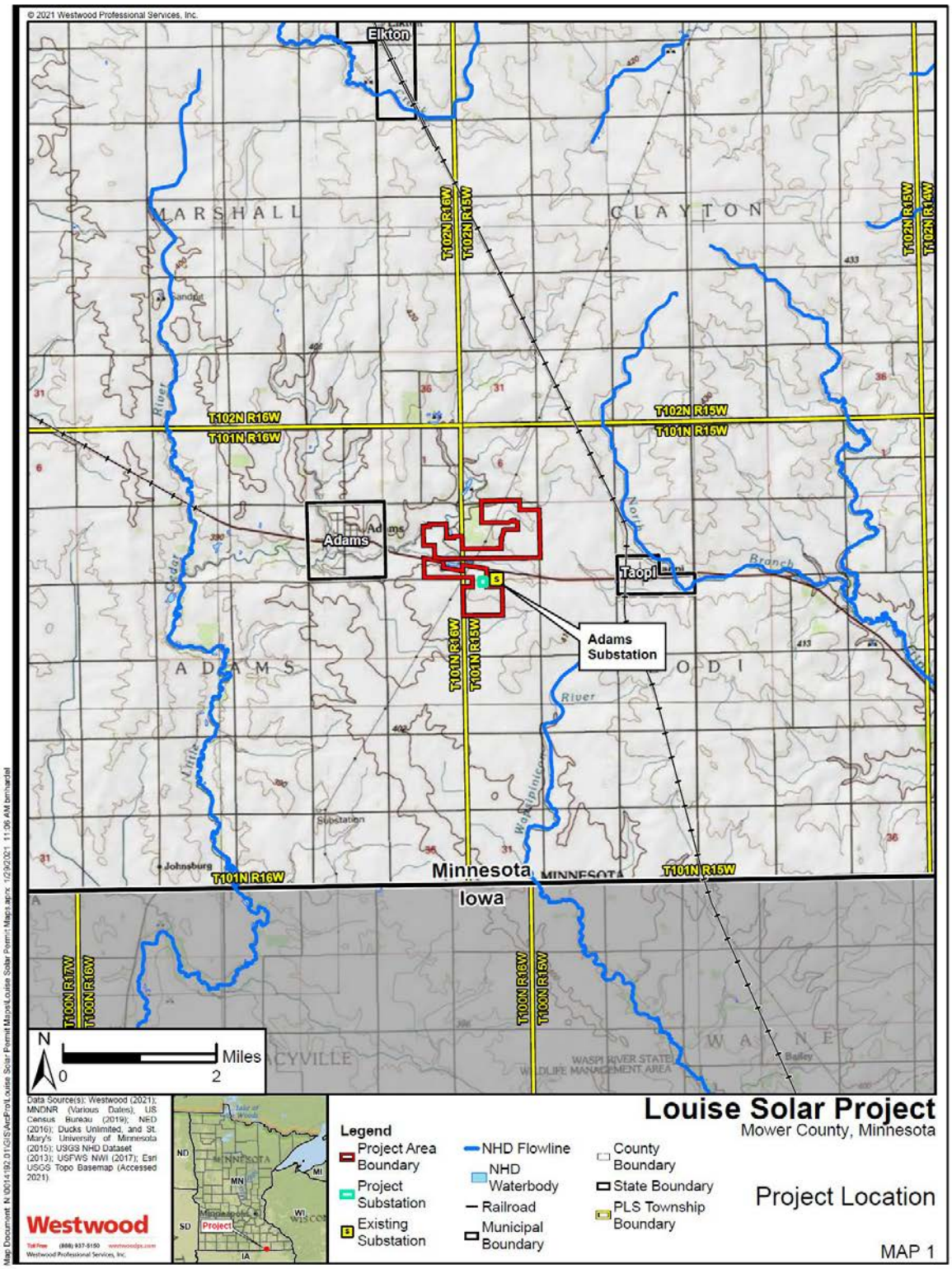
The EA is anticipated to be complete by the end of September 2021. Upon completion, it will be noticed and made available for review. A public hearing will be held in the project area after the EA has been issued. This hearing will be noticed. Comments on the EA may be submitted into the hearing record.

Signed this 21st day of June, 2021

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE

Katherine Blauvelt, Assistant Commissioner

Figure 1 Project Location



Appendix C Sample Solar Site Permit

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

SITE PERMIT FOR A
SOLAR ENERGY GENERATING SYSTEM

IN
[COUNTY]

ISSUED TO
[PERMITTEE]

PUC DOCKET NO. [Docket Number]

In accordance with the requirements of Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850 this site permit is hereby issued to:

[Permittee]

The Permittee is authorized by this site permit to construct and operate [Provide a description of the project authorized by the Minnesota Public Utilities Commission]. The solar energy generating system and associated facilities shall be built and operated within the site identified in this permit and as portrayed in the official site maps, and in compliance with the conditions specified in this permit.

This site permit shall expire [xx] years from the date of this approval.

Approved and adopted this ____ day of _____

BY ORDER OF THE COMMISSION

_____

Daniel P. Wolf,
Executive Secretary

CONTENTS

ATTACHMENTS

1 SITE PERMIT

The Minnesota Public Utilities Commission (Commission) hereby issues this site permit to [Permittee Name] (Permittee) pursuant to Minnesota Statutes Chapter 216E and Minnesota Rules Chapter 7850. This permit authorizes the [Permittee Name] to construct and operate [Provide a description of the project as authorized by the Minnesota Public Utilities Commission], and as identified in the attached site maps, hereby incorporated into this document.

1.1 Preemption

Pursuant to Minn. Stat. § 216E.10, this permit shall be the sole site approval required for the location, construction, and operation of the solar energy generating system and this permit shall supersede and preempt all zoning, building, or land use rules, regulations, or ordinances promulgated by regional, county, local and special purpose government.

2 PROJECT DESCRIPTION

[Provide a description of the project as authorized by the Minnesota Public Utilities Commission]

2.1 Associated Facilities

2.2 Project Location

The project is located in the following:

County	Township Name	Township	Range	Section

3 DESIGNATED SITE

The site designated by the Commission for the [Project Name] is the site depicted on the site maps attached to this permit. [As applicable, provide a detailed description of the authorized site. Example: The site is generally described as follows...]

The layout represents the approximate location of photovoltaic tracker rows and associated facilities within the project boundary and identifies a layout that seeks to minimize the overall

potential human and environmental impacts of the project, which were evaluated in the permitting process. The project boundary serves to provide the Permittee with the flexibility to make minor adjustments to the layout to accommodate requests by landowners, local government units, federal and state agency requirements, and unforeseen conditions encountered during the detailed engineering and design process. Any modification to the location of a photovoltaic tracker row or other associated facility depicted in the preliminary layout shall be done in such a manner to have comparable overall human and environmental impacts and shall be specifically identified in the site plan pursuant to Section 8.3.

4 GENERAL CONDITIONS

The Permittee shall comply with the following conditions during construction and operation of the solar energy generating system and associated facilities over the life of this permit.

4.1 Permit Distribution

Within 30 days of permit issuance, the Permittee shall send a copy of the permit and the complaint procedures to any regional development commission, county auditor and environmental office, and city and township clerk in which any part of the site is located.

Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this site permit and complaint procedures less than five days prior to the start of construction on their property. An affected landowner is any landowner or designee that is within or adjacent to the permitted site.

4.2 Access to Property

The Permittee shall contact landowners prior to entering the property or conducting maintenance within the site, unless otherwise negotiated with the affected landowner.

4.3 Construction and Operation Practices

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the [Site Permit Application date and title], and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

4.3.1 Field Representative

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to commencing construction. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commencing construction. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, local government units and other interested persons.

4.3.2 Site Manager

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of the project. This person shall be accessible by telephone or other means during normal business hours for the life of this permit.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the site manager 14 days prior to commercial operation of the facility. The Permittee shall provide the site manager's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commercial operation of the facility. The Permittee may change the site manager at any time upon notice to the Commission, affected landowners, local government units and other interested persons.

4.3.3 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform and educate all employees, contractors, and other persons involved in the construction and ongoing operation of the solar energy generating system of the terms and conditions of this permit.

4.3.4 Public Services and Public Utilities

During construction, the Permittee shall minimize any disruption to public services and public utilities. To the extent disruptions to public services or public utilities occur these will be temporary, and the Permittee will restore service promptly. Where any impacts to utilities have the potential to occur the Permittee will work with both landowners and local agencies to determine the most appropriate mitigation measures if not already considered as part of this permit.

The Permittee shall cooperate with county and city road authorities to develop appropriate signage and traffic management during construction.

4.3.5 Temporary Work Space

Temporary work space and equipment staging areas shall be selected to limit the removal and impacts to vegetation. Temporary work space shall not be sited in wetlands or native prairie as defined in sections 4.3.10 and 4.3.11. Temporary work space shall be sited to comply with standards for development of the shorelands of public waters as defined in Section 4.3.10. Temporary easements outside of the authorized site boundary will be obtained from affected landowners through rental agreements and are not provided for in this permit.

4.3.6 Noise

The Permittee shall comply with noise standards established under Minn. R. 7030.0100 to 7030.0080, at all times at all appropriate locations during operation of the facility. Construction and maintenance activities shall be limited to daytime working hours to the extent practicable to ensure nighttime noise level standards will not be exceeded.

4.3.7 Aesthetics

The Permittee shall consider input pertaining to visual impacts from landowners and land management agencies. Care shall be used 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.

4.3.1 Topsoil Protection

The Permittee shall implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.

4.3.2 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable.

4.3.3 Soil Erosion and Sediment Control

The Permittee shall implement erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency (MPCA) Construction Stormwater Program. If construction of the facility disturbs more than one acre of land, or is sited in an area designated by the MPCA as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit from the MPCA that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. 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. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

4.3.4 Public Lands

In no case shall photovoltaic tracker rows and associated facilities including foundations, access roads, underground cable, and transformers, be located in the public lands identified in Minn. R. 7850.4400, subp. 1, or in federal waterfowl production areas. Photovoltaic tracker rows and associated facilities shall not be located in the public lands identified in Minn. R. 7850.4400, subp. 3, unless there is no feasible and prudent alternative.

4.3.5 Wetlands and Water Resources

Photovoltaic tracker rows and associated facilities, including access roads, underground cable and transformers shall not be placed in public waters and public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that

electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE), and local units of government as implementers of the Minnesota Wetlands Conservation Act. Photovoltaic tracker rows and associated facilities including foundations, access roads, underground cable and transformers, shall be located in compliance with the standards for development of the shorelands of public waters as identified in Minn. R. 6120.3300, and as adopted, Minn. R. 6120.2800, unless there is no feasible and prudent alternative.

Construction in wetland areas shall occur during frozen ground conditions to minimize impacts, to the extent feasible. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and managed in accordance with all applicable wetland permits. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

Wetland and water resource areas disturbed by construction activities shall be restored to pre-construction conditions in accordance with the requirements of applicable state and federal permits or laws and landowner agreements. All requirements of the USACE, DNR, and local units of government shall be met.

4.3.6 Native Prairie

Solar panels and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be placed in native prairie, as defined in Minn. Stat. § 84.02, subd. 5, unless addressed in a prairie protection and management plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minn. Stat. § 216E.01, shall not impact native prairie unless addressed in a prairie protection and management plan.

The Permittee shall prepare a prairie protection and management plan in consultation with the DNR if native prairie, as defined in Minn. Stat. § 84.02, subd. 5, is identified within the site boundaries. The Permittee shall file the plan 30 days prior to submitting the site plan required by Section 8.3 of this permit. The plan shall address steps that will be taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee, the DNR, and the Commission.

4.3.7 Vegetation Removal

The Permittee shall disturb or clear vegetation on the site only to the extent necessary to assure suitable access for construction, and for safe operation and maintenance of the project. The Permittee shall minimize the number of trees removed in selecting the site layout specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and other vegetation, to the extent that such actions do not violate sound engineering principles or interfere with the operation of the facility.

4.3.8 Beneficial Habitat

The Permittee shall implement site restoration and management practices that provide for native perennial vegetation and foraging habitat beneficial to gamebirds, songbirds, and pollinators; and improve soil water retention and reduce storm water runoff and erosion. To ensure continued management and recognition of beneficial habitat, the Permittee is encouraged to meet the standards for Minnesota's Habitat Friendly Solar Program by submitting project plans, seed mixes, a completed project planning assessment form, and any other applicable documentation used to meet the standard to the Board of Water and Soil Resources (BWSR). All documents required by BWSR for meeting Habitat Friendly Solar Certification and maintenance of that Certification should also be filed with the Commission.

4.3.9 Vegetation Management Plan

The Permittee shall develop a vegetation management plan using best management practices established by the DNR and BWSR. The vegetation management plan shall be prepared in coordination with the Department of Commerce, DNR, and BWSR. The vegetation management plan and documentation of the coordination efforts between the permittee and the coordinating agencies shall be filed at least 14 days prior to the preconstruction meeting. The Permittee shall provide all affected landowners with copies of the plan.

The vegetation management plan must include the following:

- Management objectives addressing short term (Year 0-3, seeding and establishment) and long term (Year 4 through the life of the permit) goals.
- A description of planned restoration and vegetation management activities, including how the site will be prepared, timing of activities, and how seeding will occur (broadcast, drilling, etc.), and the types of seed mixes to be used.
- A description of how the site will be monitored and evaluated to meet management goals.

- A description of the management tools used to maintain vegetation (e.g., mowing, spot spraying, hand removal, fire, grazing, etc.), including the timing and frequency of maintenance activity.
- Identification of the third-party responsible (e.g., consultant, contractor, site manager, etc.) for restoration, monitoring, and long-term vegetation management of the site.
- Identification of on-site noxious weeds and invasive species (native and non-native) and the monitoring and management practices to be utilized.
- A site plan showing how the site will be revegetated and that identifies the corresponding seed mixes. Best management practices should be followed concerning seed mixes, seeding rates, and cover crops.

4.3.10 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture, Minnesota Department of Natural Resources, and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners, and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

4.3.11 Invasive Species

The Permittee shall employ best management practices to avoid the potential introduction and spread of invasive species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 30 days prior to the pre-construction meeting.

4.3.12 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil the Permittee shall select site appropriate seed certified to be

free of noxious weeds. To the extent possible, the Permittee shall use native seed mixes. The Permittee shall consult with landowners on the selection and use of seed for replanting.

4.3.13 Roads

The Permittee shall advise the appropriate governing bodies having jurisdiction over all state, county, city or township roads that will be used during the construction phase of the project. Where practical, existing roadways shall be used for all activities associated with construction of the facility. Oversize or overweight loads associated with the facility shall not be hauled across public roads without required permits and approvals.

The Permittee shall locate all perimeter fencing and vegetative screening in a manner that does not interfere with routine road maintenance activities and allows for continued safe travel on public roads.

The Permittee shall construct the least number of site access roads it can. Access roads shall not be constructed across streams and drainage ways without the required permits and approvals. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when accessing construction workspace, unless otherwise negotiated with the affected landowner.

4.3.14 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the facility. In the event that a resource is encountered, the Permittee shall consult with the State Historic Preservation Office (SHPO) and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with the SHPO and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction and promptly notify local law

enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement or the State Archaeologist.

4.3.15 Interference

If interference with radio or television, satellite, wireless internet, GPS-based agriculture navigation systems or other communication devices is caused by the presence or operation of the project, the Permittee shall take whatever action is feasible to restore or provide reception equivalent to reception levels in the immediate area just prior to the construction of the project.

4.3.16 Restoration

The Permittee shall restore the areas affected by construction of the solar facility to the condition that existed immediately before construction began to the extent possible. The time period to complete restoration may be no longer than 12 months after the completion of construction, unless otherwise negotiated with the affected landowner. Restoration shall be compatible with the safe operation, maintenance and inspection of the project. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

4.3.17 Cleanup

All waste and scrap that is the product of construction shall be removed from the site and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

4.3.18 Pollution and Hazardous Wastes

All appropriate precautions to protect against pollution of the environment shall be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during construction and operation of the facility.

4.3.19 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

4.3.20 Public Safety

The Permittee shall provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the project and any restrictions or dangers associated with the project. The Permittee shall also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minn. Stat. § 216D.01, subd. 11, to Gopher State One Call following the completion of construction at the site.

4.3.21 Site Identification

The solar site shall be marked with a visible identification number and or street address.

4.4 Feeder Lines

Feeder lines that carry power from an internal project interconnection point to the project substation or interconnection point on the electrical grid may be overhead or underground. Overhead and underground feeder lines that parallel public roads shall be placed within the public right-of-way or on private land immediately adjacent to the road. The Permittee shall obtain approval from the private landowner or government unit responsible for the affected right-of-way.

Feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited, to existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines with the site plan pursuant to Section 8.3.

4.5 Other Requirements

4.5.1 Safety Codes and Design Requirements

The solar energy generating system and associated facilities shall be designed to meet or exceed all relevant local and state codes, Institute of Electrical and Electronics Engineers, Inc.

(IEEE) standards, the National Electric Safety Code (NESC), and North American Electric Reliability Corporation (NERC) requirements. The Permittee shall report to the Commission on compliance with these standards upon request.

4.5.2 Other Permits and Regulations

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. The Permittee shall submit a copy of such permits to the Commission upon request.

5 SPECIAL CONDITIONS

Special conditions shall take precedence over other conditions of this permit should there be a conflict.

[Describe any special conditions]

Examples of special conditions included in permits:

- Avian Mitigation Plan
- Environmental Control Plan
- Agriculture Mitigation Plan
- Vegetation Management Plan
- Property Restrictions
- Minnesota Department of Natural Resources Requirements
- Minnesota Pollution Control Requirements
- Minnesota State Historical Preservation Office Requirements
- Minnesota Department of Transportation Requirements

For example:

Landscaping Plan

The Permittee shall develop a site specific landscaping plan that considers local government ordinances and setbacks, and that mitigates to the extent practical the visual impacts to all adjacent residences. The landscaping plan shall be filed at least 14 days prior to the pre-

construction meeting. Within 14 days of approval of the final Landscaping Plan, the Permittee shall provide all affected landowners with copies of the plan.

Vegetation Management Plan

The Permittee shall develop a vegetation management plan in consultation with the DNR to the benefit of pollinators and other wildlife, and to enhance soil water retention and reduce storm water runoff and erosion. The vegetation management plan shall be filed at least 14 days prior to the pre-construction meeting. Within 14 days of approval of the final Vegetation Management Plan, the Permittee shall provide all affected landowners with copies of the plan.

Security Fence

The security fence surrounding the facility shall be designed to minimize the visual impact of the project. While maintaining compliance with the NESC, the Permittee shall install an eight-foot wood pole and woven wire fence, or substantially similar, around the perimeter of the facility. This type of fence is commonly referred to as a "deer fence" or "agricultural fence." The permittee shall consult with the DNR to insure the design of the facilities preserves or replaces identified natural wildlife, wetland, woodland or other corridors.

Tree Removal Timetables

Tree removal required by the project shall be done between October 1st and March 30th to mitigate negative impacts to the northern long-eared bat and to minimize potential impacts on migratory birds, unless other appropriate time limitations on tree clearing are determined in consultation with the U.S. Fish and Wildlife Service (USFWS). The Permittee shall file an account of that consultation 14 days prior to the pre-construction meeting.

Independent Inspector

The Permittee shall retain an independent third-party inspector, which could include a local unit of government with the inspection authority. The selection of the inspector and scope of the inspection effort shall be approved by the Department of Commerce and Commission's Executive Secretary. The inspector shall oversee the construction process and ensure that the project conforms to the site permit terms, conditions, and the specifications outlined in the record. The inspector shall file a report at 30-day intervals with the Commission addressing compliance during construction and the first 60 days of operation.

6 DELAY IN CONSTRUCTION

If the Permittee has not commenced construction or improvement of the site within four years after the date of issuance of this permit the Permittee shall file a report on the failure to construct and the Commission shall consider suspension of the permit in accordance with Minn. R. 7850.4700.

7 COMPLAINT PROCEDURES

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the complaint procedures attached to this permit.

Upon request, the Permittee shall assist the Commission with the disposition of unresolved or longstanding complaints. This assistance shall include, but is not limited to, the submittal of complaint correspondence and complaint resolution efforts.

8 COMPLIANCE REQUIREMENTS

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission.

8.1 Pre-Construction Meeting

Prior to the start of any construction, the Permittee shall participate in a pre-construction meeting with the Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the construction start date.

8.2 Pre-Operation Meeting

At least 14 days prior to commercial operation of the facility, the Permittee shall participate in a pre-operation meeting with the Department of Commerce and Commission staff to coordinate field monitoring of operation activities for the project. Within 14 days following the pre-

operation meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees.

8.3 Site Plan

At least 30 days prior to the pre-construction meeting, the Permittee shall provide the Commission, the Department, and the [Environmental department of the county where the site is located] with a site plan that includes specifications and drawings for site preparation and grading; specifications and locations of photovoltaic panels and other structures to be constructed including all electrical equipment, pollution control equipment, fencing, roads, and other associated facilities; and procedures for cleanup and restoration. The documentation shall include maps depicting the site boundary and layout in relation to that approved by this permit.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes to its site plan or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

8.4 Status Reports

The Permittee shall report to the Commission on progress during site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the submittal of the site plan for the project and continue until completion of restoration. Reports shall describe construction activities and progress, and activities undertaken in compliance with this permit. Reports shall include text and photographs.

8.5 Labor Statistic Reporting

The Permittee shall file quarterly reports with the Commission within 45 days of the end of the quarter regarding construction workers that participated in the construction of the project. The reports shall (a) detail the Permittee's efforts and the site contractor's efforts to hire Minnesota workers, and (b) provide an account of: (i) the gross number of hours worked by or full-time equivalent workers who are Minnesota residents, as defined in Minn. Stat. § 290.01, subd. 7; (ii) the gross number of hours worked by or full-time equivalent workers who are residents of

other states, but maintain a permanent residence within 150 miles of the project; and (iii) the total gross hours worked or total full-time equivalent workers. Permittee shall work with its contractor to determine the suitable reporting metric. The report may not include personally identifiable data.

8.6 In-Service Date

At least three days before the facility is to be placed into service, the Permittee shall notify the Commission of the date on which the facility will be placed into service and the date on which construction was completed.

8.7 As-Builts

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

8.8 GPS Data

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the solar energy generating system.

8.9 Project Energy Production

The Permittee shall, by February 1st following each complete or partial year of project operation, file a report with the Commission on the monthly energy production of the facility including:

(a) the installed nameplate capacity of the permitted facility;

(b) the total daily energy generated by the facility in MW hours;

(c) the total monthly energy generated by the facility in MW hours;

(d) the monthly capacity factor of the facility;

(e) yearly energy production and capacity factor for the facility;

(f) the average monthly and average annual solar strength gradient measured in kWh/m²/Day observed at the facility;

(g) the operational status of the facility and any major outages, major repairs, or performance improvements occurring in the previous year; and

(h) any other information reasonably requested by the Commission.

This information shall be considered public and must be filed electronically.

8.10 Emergency Response

The Permittee shall prepare an Emergency Response Plan in consultation with the emergency responders having jurisdiction over the facility prior to project construction. The Permittee shall submit a copy of the plan, along with any comments from emergency responders, to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting. The Permittee shall provide as a compliance filing confirmation that the Emergency Response Plan was provided to the emergency responders and Public Safety Answering Points (PSAP) with jurisdiction over the facility prior to commencement of construction. The Permittee shall obtain and register the facility address or other location indicators acceptable to the emergency responders and PSAP having jurisdiction over the facility.

8.11 Extraordinary Events

Within 24 hours of discovery of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, solar panel collapse, acts of sabotage, collector or feeder line failure, and injured worker or private person. The Permittee shall, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

8.12 Wildlife Injuries and Fatalities

The Permittee shall report any wildlife injuries and fatalities to the Commission quarterly.

9 DECOMMISSIONING AND RESTORATION

9.1 Decommissioning Plan

The Permittee shall submit a decommissioning plan to the Commission at least fourteen 14 days prior to the pre-operation meeting and provide updates to the plan every five years thereafter. The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of solar panels, racks, underground collection cables, access roads, transformers, substations, and other project components. The plan may also include anticipated costs for the replacement of panels or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

9.2 Site Restoration

Upon expiration of this permit or upon termination of operation of the project, the Permittee shall have the obligation to dismantle and remove from the site all solar panels, mounting steel posts and beams, inverters, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment. To the extent feasible, the Permittee shall restore and reclaim the site to pre-project conditions. Landowners may require the site be returned to agricultural production or may retain restored prairie vegetation, or other land uses as agreed to between the landowner and the Permittee. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. All such agreements between the Permittee and the affected landowner shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months of termination.

9.3 Abandoned Solar Installations

The Permittee shall advise the Commission of any solar facilities that are abandoned prior to termination of operation of the project. The project, or any equipment within the project, shall

be considered abandoned after one year without energy production and the land restored pursuant to Section 9.2 unless a plan is submitted to and approved by the Commission outlining the steps and schedule for returning the project, or any equipment within the project, to service.

10 COMMISSION AUTHORITY AFTER PERMIT ISSUANCE

10.1 Final Boundaries

After completion of construction the Commission shall determine the need to adjust the final site boundaries required for the project. This permit may be modified, after notice and opportunity for hearing, to represent the actual site boundary required by the Permittee to operate the project authorized by this permit.

10.2 Expansion of Site Boundaries

No expansion of the site boundary described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundary of the site for the project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

10.3 Periodic Review

The Commission shall initiate a review of this permit and the applicable conditions at least once every five years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

10.4 Modification of Conditions

After notice and opportunity for hearing this permit may be modified or amended for cause, including but not limited to the following:

(a) violation of any condition in this permit;

(b) endangerment of human health or the environment by operation of the project; or

(c) existence of other grounds established by rule.

10.5 More Stringent Rules

The issuance of this permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

10.6 Right of Entry

The Permittee shall allow Commission designated representatives to perform the following, upon reasonable notice, upon presentation of credentials and at all times in compliance with the Permittee's site safety standards:

(a) To enter upon the facilities easement of the property for the purpose of obtaining information, examining records, and conducting surveys or investigations.

(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations.

(c) To sample and monitor upon the facilities easement of the property.

(d) To examine and copy any documents pertaining to compliance with the conditions of this Permit.

11 PERMIT AMENDMENT

This permit may be amended at any time by the Commission. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

12 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description

of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required.

13 REVOCATION OR SUSPENSION OF THE PERMIT

The Commission may initiate action to revoke or suspend this permit at any time. The Commission shall act in accordance with the requirements of Minn. R. 7850.5100, to revoke or suspend the permit.

14 EXPIRATION DATE

This permit shall expire 30 years after the date this permit was approved and adopted.

Appendix D Decommissioning Plan

Louise Solar Project

Mower County, Minnesota

Decommissioning Plan

Prepared for:

EDF Renewables
10 Second Street NE, Suite 400
Minneapolis, MN 55413

Prepared by:

Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343

May 21, 2021

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1.0 Decommissioning Plan

1.1 General

The following provisions are intended to ensure that facilities are properly removed after their useful life. The plan includes provisions for removal of all structures, foundations, underground cables, unused transformers and foundations; restoration of soil and vegetation; and a plan ensuring financial resources will be available to fully decommission the site according to the conditions described in Section 9 of the Site Permit issued by the Minnesota Public Utilities Commission. The Contractors will comply with requirements of all permits during the decommissioning process, and disposal of structures and foundations will comply with the provisions of the County Solid Waste Ordinance.

The Louise Solar Project (the "Project") is a proposed 50 Megawatt alternating current (50 MW-ac) solar electric generating facility operated by Louise Solar / EDF Renewables (the "Owner") using ground mounted photo voltaic panels, located on approximately 323 acres of land in Mower County, Minnesota. The facilities will be located in a fenced area of approximately 314 acres.

1.2 Decommissioning and Reclamation

Solar panels are expected to have a useful commercial lifespan of around 35 years. The Project shall be decommissioned upon expiration of the Site Permit or upon termination of operation of the Project. The Owner will be responsible for removal of all above ground equipment and underground equipment within the Project area. The owner will restore and reclaim the site to pre-construction topography and topsoil quality to the extent practical.

Decommissioning includes removing the solar panels, solar panel racking, steel foundation posts and beams, inverters, transformers, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment. The civil facilities, access road, security fence, and drainage structures and sedimentation basins are included in the scope. Standard decommissioning practices would be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements.

After all equipment is removed, any holes or voids created by poles, concrete pads and other equipment will be filled in with soil to the surrounding grade and seeded with a previously approved seed mix consistent with recommendations of the USDA Native Habitat Development for Pollinators (327) Biology Jobsheet #16, as maybe amended. All access roads and other areas compacted by equipment will be de-compacted to a depth of 18 inches from finished grade prior to fine grading and tilling or seeding. This may include seeding as farmland or re-development of the land for other beneficial uses, based on consultation with the landowner.

1.3 List of Decommissioning Activities

1.3.1 Timeline

Decommissioning is estimated to take approximately 20 weeks to complete and the decommissioning crew(s) will ensure that all equipment and materials are recycled or disposed of properly.

1.3.2 Notice to Parties

Within ninety (90) days of the start of the decommissioning, a notice will be sent to landowners and local units of government. Permits will be obtained prior to the start of any work

1.3.3 Removal and Disposal of Site Components

The removal and disposal details of the site components are found below.

Modules: Modules will be inspected for physical damage, tested for functionality, and disconnected and removed from racking. Functioning modules will be packed and shipped to an offsite facility for reuse or resale. Non-functioning modules will be packed, palletized and shipped to the manufacturer or a third party for recycling or disposal.

Racking: Racking and racking components will be disassembled and removed from the steel foundation posts, processed to appropriate size, and sent to a metal recycling facility.

Steel Foundation Posts: All structural foundation steel posts will be pulled out to full depth, removed, processed to appropriate size, and shipped to a recycling facility. During decommissioning, the area around the foundation posts 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 for vegetation.

Overhead and Underground Cables and Lines: All underground cables and conduits will be removed to full depth. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. The subgrade will be compacted to a density of approximately 90 percent of Standard Proctor density. Topsoil will be redistributed across the disturbed area. Overhead lines will be removed from the Project and taken to a recycling facility.

Inverters, Transformers, and Ancillary Equipment: All electrical equipment will be disconnected and disassembled. All parts will removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Owner's sole discretion, consistent with applicable regulations and industry standards.

Equipment Foundation and Ancillary Foundations: The ancillary foundation for Louise Solar are pile foundations for both equipment skids and met stations. As with the solar array steel foundation posts, the foundation piles will be pulled out completely. Duct banks will be excavated to full depth. All unexcavated areas compacted by equipment used in decommissioning will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density of approximately 90 percent of Standard Proctor density. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the owner'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 Owner'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 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 the following process:

1) After final clean-up, roads may be left intact through mutual agreement of the landowner and the Owner unless otherwise restricted by federal, state, or local regulations.

2) If a road is to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, at the Owner'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. All 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 to a depth of approximately 18 inches using a chisel plow or other appropriate subsoiling equipment. All rocks larger than four inches will be removed. Topsoil

that was stockpiled during the original construction will be distributed across the open area. The access roads and adjacent areas that are compacted by equipment will be de-compacted.

1.3.4 Restoration/Reclamation of Site

The Owner will restore and reclaim the site to approximately the pre-construction condition consistent with the site lease agreement. The Owner assumes that most of the site will be returned to farmland and/or pasture after decommissioning, and will implement appropriate measures to facilitate such uses. If no specific use is identified, the Owner will vegetate the site with a seed mix approved by the local soil and water conservation district or similar agency. The goal of restoration will be to restore natural hydrology and plant communities to the greatest extent practicable while minimizing new disturbance and removal of native vegetation. The decommissioning effort will implement best management practices (BMP's) to minimize erosion and to contain sediment on the Project to the extent practicable with the intent of meeting this goal include:

1. Minimize new disturbance and removal of native vegetation to the greatest extent practicable.

2. Removal of solar equipment and all access roads up to full depth, backfill with subgrade material and cover with suitable topsoil to allow adequate root penetration for plants, and so that subsurface structures do not substantially disrupt ground water movements.

3. Any topsoil that is removed from the surface for decommissioning will be stockpiled to be reused when restoring plant communities. Once decommissioning activity is complete, topsoil will be re-spread to assist in establishing and maintaining plant communities.

4. Stabilize soils and returning them to agricultural use 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 storm water management objectives and requirements.

6. Remediate any petroleum product leaks and chemical releases prior to completion of decommissioning.

Decommissioning and restoration activities at each site will be completed within 12 months after the end of commercial operations.

1.4 Permitting and Post-Restoration Monitoring

It is anticipated that the following permits may be needed prior to or during decommissioning:

- U.S. Army Corps of Engineers (USACE): Section 404 Permit
- U.S. Environmental Protection Agency (EPA): Spill Prevention, Control, and Countermeasures Plan (SPCC)
- Minnesota Pollution Control Agency (PCA): Section 401 Water Quality Certification
- Minnesota Pollution Control Agency (PCA): National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS)
- Minnesota Pollution Control Agency (PCA): Stormwater Pollution Prevention Plan (SWPPP)

Decommissioning of the site will comply with permits listed above if grading activities are necessary and exceed applicable permit thresholds. Decommissioning may include post-restoration monitoring as required by the NPDES/SDS CSW Permit and SWPPP and other applicable requirements. In addition, the Owner's Field Representative assigned to decommissioning monitoring will stay in contact with the landowner, including onsite check-ins until the NPDES/ SDS CSW permit is closed.

1.5 Estimated Net Decommissioning Costs

The decommissioning costs are calculated using current pricing. In keeping with the EERA recommendations the estimate of net costs should be updated periodically to recognize price trends for both decommissioning costs and the salvage and resale values of the components. The cost estimate uses current pricing for removal of components based on five years of degradation and depreciation of the solar modules. Subsequent revisions to the decommissioning plan and cost estimate may be required based on changes in construction techniques and technology and changing material scrap or resale values.

There are currently active markets for scrap steel, aluminum, and copper, used transformers and electrical equipment, and used solar panels. Scrap metal prices have been discounted from posted spot prices found on www.scrapmonster.com. Pricing for used panels has been discounted from prices received from We Recycle Solar for a similar project. The pricing of the used panels has incorporated the degradation from five years of use as warrantied the manufacturer (not more than 0.5 percent per year).

The estimated cost for decommissioning is approximately $5,597,000. Salvage and resale value is estimated as approximately $5,415,000, resulting in a net cost of approximately $182,000 for the initial period of operation. The resale and salvage values are necessary for the Owner to account for the long-term assets and liabilities, and value as a going concern. Under the requirements of the EERA recommendations a Financial Assurance is not required during the first ten (10) years of operation. A bond will be posted no earlier than the 10th anniversary from the date of Operation with the County. The cost of decommissioning will be updated every five years after the tenth year of operation in accordance with the EERA recommendations.

For additional detail on the assumptions made see Section 1.6.

Cost Estimate on next page.

Cost estimate:

Louise Solar Project				
Project Size	65.28	MW-DC	50.00	MW-AC
	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	$336,200.00	$336,200
Mobilization was estimated to be approximately 7% of total cost of other items.				
Permitting				
State Permits	1	Lump Sum	$10,000.00	$10,000
Subtotal Permitting				**$10,000**
Decommissioning will require a SWPPP and SPCC plan, cost is an estimate of the permit preparation cost				
Civil Infrastructure				
Removal Gravel Surfacing from Road	6,053	Cubic Yards (BV)	$3.97	$24,014
Haul Gravel Removed from Road (Austin, MN)	7,566	Cubic Yards (LV)	$11.80	$89,298
Disposal of Gravel Removal from Road	9,805	Tons	$0.00	$0
Removal Geotextile Fabric from Road Area	40,856	Square Yards	$1.40	$57,198
Haul Geotech Fabric Removed from Beneath Access Roads	11	Tons	$6.44	$72
Disposal of Geotech Fabric Removed from Beneath Access Roads	11	Tons	$74.00	$831
Remove and Load Culvert from Beneath Access Roads	8	Each	$448.00	$3,584
Haul Culvert Removed from Access Roads	2	Tons	$6.44	$15
Disposal of Culverts (Austin, MN)	2	Tons	$74.00	$178
Remove Low Water Crossing from Access Roads	10	Each	$3,400.00	$34,000
Haul Low Water Crossing Materials Removed from Access Roads	10	Each	$257.60	$2,576
Disposal of Low Water Crossing Materials	10	Each	$2,960.00	$29,600
Grade Road Corridor (Re-spread Topsoil)	20,428	Linear Feet	$1.03	$21,107
Grade Retention Ponds and respread Topsoil	17	Each	$3,363.58	$57,181
Decompaction on Road Area	11.26	Acres	$418.71	$4,713
Removal of Security Fence	41,933	Linear Feet	$8.17	$342,593
Subtotal Civil Infrastructure				**$666,960**
Structural Infrastructure				
Removal Array Steel Foundation Posts	74,863	Each	$12.91	$966,269
Haul Array Steel Post (Austin, MN)	1,658	Tons	$6.44	$10,675
Haul Drive Motor Posts	181	Tons	$6.44	$1,168
Removal of Tracker Row Racking	1,889	Each	$253.65	$479,155
Haul Tracker Row Racking (Austin, MN)	3,783	Ton	$6.44	$24,361
Subtotal Structural Infrastructure				**$1,481,629**
Electrical Collection/Transmission System				
Removal of PV Panels	146,692	Each	$5.27	$773,189
Haul PV 95% of Panels to Reseller (Westchester County, NY)	4,363	Tons	$345.10	$1,505,543
Haul 5% of PV Panels for Disposal (Austin, MN)	230	Tons	$6.44	$1,479
Removal of Combiner Boxes	168	Each	$60.00	$10,080
Removal of Equipment Skids	14	Each	$4,000.00	$56,000
Haul Equipment Skids to Recycler (Prairie Du Chien, WI)	177	Tons	$33.60	$5,951
Removal of Scada Equipment	1	Each	$5,000.00	$5,000
Removal of DC Collector System Cables (copper)	141,728.0	Linear Feet	$0.68	$96,318
Removal of Underground (AC) Collector System Cables	26,694.0	Linear Feet	$2.10	$56,047
Load and Haul Cables for Recycling	141.0	Ton	$8.44	$1,190
Removal of Fiber Optic Cable	17,425.0	Linear Feet	$2.10	$36,586
Subtotal Electrical Collection/Transmission System				**$2,547,382**

Substation				
Disassembly and Removal of Main Power Transformer(s)	1	Each	$4,500.00	$4,500
Freight Transformer(s) Offsite	1	Each	$3,600.00	$3,600
Disposal of Transformer (Including Oil)	1	Each	$0.00	$0
Excavate Around Transformer Foundation(s)	1	Each	$1,946.00	$1,946
Remove Complete Transformer Foundation(s)	1	Each	$3,850.00	$3,850
Backfill Excavation Area from Transformer Foundation Removal	1	Each	$766.00	$766
Haul Concrete Foundations for Transformer, Switch Gear, etc.	340	Tons	$6.44	$2,190
Disposal of Concrete from Transformer Foundation	340	Tons	$75.00	$25,500
Demolish Substation Site Improvements (fences, etc)	1	LS	$3,500.00	$3,500
Demolish Control Building and Foundation	1	LS	$12,000.00	$12,000
Remove Medium/High Voltage Equipment	1	LS	$3,500.00	$3,500
Remove Structural Steel Substation Frame	1	LS	$3,500.00	$3,500
Haul - Demolition Materials, Removed Equipment & Structural Steel	10	Tons	$32.20	$322
Disposal of Demolition Materials, Removed Equipment & Struct. Stl.	1	LS	$350.00	$350
Remove and Load Gravel Surfacing from Substation Site	6,497	Cubic Yards (BV)	$3.97	$25,777
Haul Gravel Removed from Substation Site	8,121	Cubic Yards (LV)	$11.80	$95,852
Disposal of Gravel from Substation Site	10,525	Tons	$0.00	$0
Grade Substation Site	263,129	SF	$0.06	$16,992
Erosion and Sediment Control at Substation Site	150	LF	$1.92	$288
Decompact Substation Site (Subsoiling)	6.04	Acres	$418.71	$2,529
Topsoil and Revegetation at Substation Site	6.04	Acres	$9,628.80	$58,164
Subtotal Substation				**$265,126.07**
Site Restoration				
Stabilized Construction Entrance	0	Each	$2,000.00	$0
Perimeter Controls (Erosion and Sediment Control)	11,650	Linear Feet	$1.92	$22,368
Till to Farmable Condition at Array Areas	314	Acres	$236.80	$74,355
Subtotal Site Restoration				**$96,723**
Project Management				
Project Manager	20	Weeks	$3,800.00	$76,000
Superintendent	20	Weeks	$3,525.00	$70,500
Field Engineer	20	Weeks	$2,325.00	$46,500
Clerk	20	Weeks	$750.00	$15,000
Subtotal Project Management				**$193,000**
Standard industry weekly rates from RS Means. 40 week schedule used				
Subtotal Demolition/Removals				**$5,597,020**

Salvage				
Fencing	210	Tons	$153.75	$32,236
Steel Posts	1,839	Tons	$153.75	$282,743
Module Racking	3,783	Tons	$153.75	$581,606
PV Modules	139,357	Each	$29.59	$4,123,934
Transfomers and Inverters	354,200	Pounds	$0.26	$90,321
Substation Transformers (Metals)	100,000	Pounds	$0.26	$25,500
Transformers (Oil)	7,420	Gallons	$0.70	$5,194
DC Collection Lines	197,400	Pounds	$1.15	$226,517
AC Collection Lines	84,600	Pounds	$0.56	$46,953
Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel module recycling, discussions with national companies that specialize in recycling and reselling electrical transformers and inverters, and the assumption that care is taken to prevent any damage or breakage of equipment.				
Subtotal Salvage				**$5,415,005**
Total Demolition Minus Salvage				**$182,016**
Notes:				
1. Prices used in analysis are estimated based on research of current average costs and salvage values.				
2. Prices provided are estimates and may fluctuate over the life of the project.				
3. Contractor means and methods may vary and price will be affected by these.				

1.6 Decommissioning Assumptions

To develop a cost estimate for the decommissioning of the Louise Solar Project, Westwood engineers made the following assumptions and used the following pricing references: Costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. We developed time and material based estimates considering composition of work crews and equipment and material required using RS Means data. When materials have a salvage value at the end of the Project life, the construction activity costs and from the hauling/freight cost are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. Decommissioning year is based on a 5 year initial period for the financial security. The projected life of the Project is 35 years.
2. This Cost Estimate is based on preliminary plans dated 10/30/20 and data provided by EDF.
3. A Project of this size and complexity requires a full time project manager or support staff.
4. Common labor will be used for the majority of the tasks except for heavy equipment operation. Since DOT unit prices are used, where possible, the labor rates will reflect union labor rates.
5. Mobilization was estimated at approximately 7% of total cost of other items.
6. Permit applications required include the preparation of a Storm Water Pollution Protection Plan (SWPPP) and a Spill Prevention Control and Countermeasure (SPCC) Plan.
7. Road gravel removal was estimated on a time and material basis using a 16 foot width and an 8 inch thickness for the access roads. Substation aggregate is included in the substation quantities. Since the material will not remain on site, a hauling cost is added to the removal cost. Road aggregate can often be disposed of by giving to landowners for use on driveways and parking

areas. Many landfills will accept clean aggregate for use as “daily cover” and do not charge for the disposal.

8. Grade Road Corridor reflects the cost of mobilizing and operating light equipment to spread and smooth the topsoil stockpiled on site to replace the aggregate removed from the road.
9. Erosion and sediment control along road reflects the cost of silt fence on the downhill side of the road and surrounding all on-site wetlands.
10. Topsoil is required to be stockpiled on site during construction, therefore this top soil is available on site to replace the road aggregate, once removed. Subsoiling cost to decompact roadway areas is estimated as $418.71 per acre (based on state DOT bid prices), and revegetation on removed substation area, which includes seed, fertilizer, lime, and care until vegetation is established is $9,628 per acre. Tilling to an agriculture ready condition is estimated as $236 per acre (based on state DOT bid prices for Soil Bed Preparation). The majority of the Project area is tilled to agriculture ready condition since the decommissioning activities are not expected to eliminate the existing grasses and vegetation under the arrays or heavily compact the soils. Array areas left as pasture will require little restoration effort since the arrays will have been planted with prairie, pollinator seed mixes, and the soils will have been rejuvenated by being planted as prairie and removed from intense farming.
11. Fence removal includes loading, hauling, and recycling or disposal. Fence and posts weigh approximately 10 pounds per foot.
12. Array support posts are generally lightweight “I” beam sections installed with a piece of specialized tracked equipment. Crew productivity is approximately 240 posts per day, and the same crew and equipment should have a similar productivity removing the posts, resulting in a per post cost of approximately $13.00.
13. A metal recycling facility (S & K Environmental) is located in Austin, MN is 23 miles from the Project site. Pricing was acquired from www.scrapmonster.com. The posts weigh approximately 150 pounds each, and we estimate the hauling costs at approximately $0.28 per ton mile. The pricing from Scrapmonster is adjusted to 75 percent of the published price to reflect the processing required for the posts to fit recycling requirements and S & K Environmental’s margin.
14. Based on the review of a manufacturer’s details of the array support structures the structures weigh approximately one pound per square foot. The facility has 146,692 modules, for a total module weight of 3,638 tons. The fixed arrays are made of light weight steel and aluminum angles, mounted on the foundation piles, which the panels are bolted to. So a crew with hand tools can disassemble and cut the pieces to sizes for recycling at a rate of about 30 arrays per person four man crew per day based on RS Means cost data.
15. Hauling the steel to Austin, MN at $0.28 per ton mile costs about $7.00 per ton.
16. The solar panels rated at 445 watts measure approximately 3.44 feet by 6.99 feet and weigh 62.6 pounds so they can easily be disconnected, removed, and packed by a three person crew at a rate we estimate at 12 panels per hour.
17. Based on preliminary design information that 4200 kVA inverters will be used on this Project. Pad mounted Inverters are modular medium sized enclosures (9’-2” long, 7’-7” tall, and 5’-3” deep (SC 4200 UP-US 4200 kVA US 1500 V) that are mounted on a concrete slab. They weigh 8,800 pounds each, and can be disconnected by a crew of electricians. They must be lifted by a truck mounted crane for transport to the recycler. They contain copper or aluminum windings.
18. Transformers for this Project will likely be mounted on the same concrete pads as the inverters. The transformers and associated cabinets weigh approximately 15,000 pounds and contain either copper, or more commonly, aluminum windings that have significant salvage value. They are

typically oil filled, but most transformer recyclers will accept the transformers with oil. The estimated costs include removal of the concrete pads and conduits feeding the equipment.

19. Medium voltage (MV) equipment and SCADA equipment are mounted on the same concrete pad as the transformer and enclosed in weather proof cabinets. Their size requires light equipment to remove them. The costs shown include the removal of the concrete pads.
20. The underground collector system cables are placed in trenches, inside of PVC conduits, with a minimum of 3 feet of cover.
21. To reduce tracking of sediment off-site by trucks removing materials, we have included a rock construction entrance priced based on state DOT bid prices.
22. Perimeter control pricing is based on a sediment fence placed on the downgrade side of the work area perimeters, and protecting wetlands and drainage swales within the Project area. Pricing is based on RS Means unit prices.
23. No topsoil will be removed from the landowner's property or used on other landowners' property during decommissioning. Most of the site will not have been compacted by heavy truck or equipment traffic so no top soil will need to be imported, and very few areas will need to be decompacted.
24. Metal salvage prices (steel, aluminum, copper) are based on quotes from www.scrapmonster .com for the U.S. Midwest in October 2020. These prices are based on delivery to the recycling facility with the material prepared to meet size, thickness, cleanliness and other specifications. A reduction of 25% has been taken from this price to reflect the difficulty of realizing the full spot prices posted. The prices are three months old at the time they are displayed on the website.
25. The steel posts and array racking are priced based on 75 percent of the HMS (high melt steel) 80/20 the price listed on www.scrapmonster.com in July, 2020. ($205 per ton)
26. Solar module degradation is approximately 0.50% per year, or 96% of capacity remaining after 5 years, and 82% capacity remaining after 35 years. The manufacturer guarantees that panels will have 98 percent the rated capacity when new, so combining the guaranteed capacity and the degradation, the estimate uses 96 percent capacity after five years. There is currently a robust market for used solar panels and pricing can be found on, Solar Biz, eBay and other sites. New entrants in the market include, We Recycle Solar, which markets used panels in Asia, Africa, and South America. We have assumed that as long as the modules are producing power they will have economic value. To avoid unconservative pricing for the used modules we used a pricing of 80 percent of the $0.0875 per watt price quoted by We Recycle Solar for a similar project within the last two months. The price is based on the buyer transporting panels placed on pallets from the Project site.
27. There is an active market for reselling and recycling electrical transformers and inverters with several national companies specializing in recycling. We have assumed that the electrical equipment will be obsolete at the time of decommissioning so we have based the pricing on a percentage of the weight that reflects the aluminum windings that can be salvaged. Pricing was obtained from scrapmonster.com in July 2020, for used transformer scrap at a price of $0.34 per pound.
28. The collection lines are priced assuming copper conductor wire for the DC circuits, which is typical. The prices used reflect a reduced yield of the copper resulting from the insulation and other materials that must be stripped from the wire so that the copper can be recycled. The estimate uses the Midwest price of #2 copper wire with an 85 percent recovery rate as found on www.scrapmonster.com in July 2020, which is $1.53 per pound. For the salvage value we have assumed 75 percent of the published price.

29. The underground collection lines are assumed to be aluminum conductor. The majority of the length of the collection lines will be buried deep enough so that it does not have to be removed. Those sections coming up out of the ground at junction boxes, or otherwise, can be salvaged. The salvage value is based on the Midwest price of E.C. Aluminum Wire as found on www.scrapmonster.com in July 2020, which is $0.74 per pound. We have reduced the price to 50 percent of the quoted price to reflect the complications of stripping insulation and separating the materials.
30. Care to prevent damage and breakage of equipment, PV modules, inverters, capacitors, and SCADA must be exercised, but removal assumes unskilled common labor under supervision.
31. All salvage is based on the weights of bulk material or equipment.

Appendix E Vegetation Management Plan

Appendix D

Vegetation Management Plan

Louise Solar Project
Mower County, Minnesota

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Vegetation Management

Louise Solar Site

Barr Engineering

12-18-20

I. Project Objectives for Vegetation Establishment

Louise Solar will establish a perennial site cover that prevents erosion, improves water infiltration, reduces runoff, promotes soil health and provides habitat and forage for pollinators. In coordination with MDA and local farmers and ranchers, Louise Solar will explore opportunities for co-location of agricultural activities including grazing and haying. Louise Solar anticipates vegetation will be fully established within three to four years, at which point the areas of the site planted with pollinator friendly seed mixes will achieve a score of 70% or better on the MN Habitat Friendly Solar Site Assessment Form for Project Planning.

The overall means for which vegetation will be established and maintained include:

- Following an adaptive management approach that includes periodically monitoring vegetation establishment success as well as the results of maintenance activities.
- Developing and implementing annual written site management plan that will be updated until the sites reach final restoration.
- Managing noxious weeds as per Minnesota Statutes, sections 18.75 to 18.91.
- Managing invasive species through mowing and herbicide application.
- Herbicide use for weed control will be limited to protect pollinators, water and soil quality.
- Providing opportunities for grazing.

II. Vegetation Installation Plan

Custom seed mixes developed for the project (in development) will be planted after all solar equipment has been installed. Details for planting will be described in the Planting Plan for the site (in development). These seed mixes are designed to be used with the vegetation management practices of mowing, grazing, and selective herbicide application. If any seed is unavailable, seed substitutions by the Contractor will be discussed with the Owner, and the Contractor shall receive written authorization for any changes prior to the start of work.

At the time of seeding all seed mixes will adhere to the specifications described in the Planting Plan. Genetic source origin of all native seed shall be from within a 150-mile radius of the site, as available. Species shall be true to their scientific name. Seed tags of the order will be provided to the Owner prior to installation. If planted in the spring, seeds shall have been properly stratified and/or scarified to break seed dormancy. All legumes shall be inoculated with proper rhizobia at the appropriate time prior to planting.

The protocol for installing seed mixes shall be dependent on the time of the completion of construction with variation in associated cover crops as follows:

- If construction is completed in **spring**, shall occur when the soil is free of frost and in a workable condition but no later than June 30. Seed mixes shall include 20 pounds per acre pure live seed (PLS) of oats as a cover crop.
- If construction is completed in **summer**, seeding shall occur between July 1 and August 15. After construction is completed the site shall be seeded immediately with 15 pounds per acre PLS of oats and 15 pounds per acre PLS of annual wheat to stabilize the soil and prevent erosion.
- If construction is completed in **late summer or early fall**, seeding shall occur between August 16 and October 31, the site shall be seeded immediately after construction with 20 pounds per acre PLS of winter wheat to stabilize the soil and prevent erosion.

- If construction is completed in **late fall**, seeding shall occur after November 1 but before the soil starts to freeze, seed mixes shall include 30 pounds per acre PLS winter wheat to provide a cover crop for the following year. Fall dormant seeding occur after soil temperatures fall below 50 degrees Fahrenheit for a consistent period of time. If agreed to by both the Owner and the Contractor, a spring seeding the following year can be substituted for a fall dormant seeding after a late fall completion of construction. If a cover crop has already been installed during the calendar year, seed mixes must be installed the same year with a fall dormant seeding.

Seeding may be conducted with a seed drill (preferred) and/or by broadcast seeding. The Contractor shall evaluate the site and determine which technique will produce the best results.

lll. Adaptive Management

Louise Solar Project will utilize an adaptive management approach for vegetation management. Adaptive management is an iterative process of decision making in the face of uncertainty, with an aim of reducing uncertainty over time via system monitoring. It is a systematic approach for improving resource management by learning from management outcomes including but not limited to:

- Vegetation impact on solar equipment
- Weed establishment
- Site cover establishment success

Vegetation Monitoring

The key to adaptive management is monitoring vegetation during the growing season (May-October). To meet vegetation management goals frequent site evaluations are critical during the first three years of vegetation establishment. Monitoring will be useful in identifying issues, tracking progress, and reevaluating management needs.

A Site Evaluation and Vegetation Maintenance Plan for the site will be developed annually for the first three years to include:

- Issues observed with vegetation establishment
- Proposed management activities
- Schedule of management activities
- Issues with stormwater management
- Issues with soil management

The annual Site Evaluation and Vegetation Maintenance Plan will be prepared by an experienced plant community restoration company. This planning process will allow for management decision making based on learning from previous management outcomes. The process is flexible and allows for alternative management actions based on site conditions at the time. Vegetation monitoring will be differentiated between an establishment phase (1-3 years) and a maintenance phase (3+ years):

Establishment Phase (1-3 years) for Pollinator Seed Mixes

Vegetation management and monitoring will be more intensive during the first few years of vegetation establishment. Monitoring will occur approximately every 4-6 weeks during the growing season by a qualified plant community restoration ecologist until final vegetation establishment goals have been achieved. An email with the updated annual Site Evaluation and Vegetation Maintenance Plans will be submitted to EDF Renewables approximately every 4-6 weeks during the growing season and will contain the items listed above.

Establishment Phase (first year) for Pasture Seed Mixes

Vegetation management and monitoring will be more intensive during the first year of vegetation establishment. Monitoring will occur approximately every 4-6 weeks during the growing season by a qualified grazing specialist until final pasture establishment goals have been achieved. An email with the updated annual Site Evaluation and Vegetation Maintenance Plans will be submitted to EDF Renewables approximately every 4-6 weeks during the growing season and will contain the items listed above.

Maintenance Phase (3+ years)
The project will likely transition to the maintenance phase after year 3. This determination will be made as management needs are reduced, including ongoing noxious weed pressure, tree growth, plant health, and other factors influencing long-term vegetation success. Monitoring will transition into the maintenance phase once the vegetation establishment goals have been achieved. The frequency of monitoring visits and reporting will be re-evaluated during this phase.

Vegetation Management Priorities
Management efforts will focus on the successful establishment of pollinator friendly species where pollinator plantings occur and on vigorous pasture establishment where grazing is to occur. The solar sites exist within an anthropogenic landscape of non-native weeds and agriculture. Neighboring non-native plants well continually be a source of weed seed for the solar sites as seed is blown or washed onto the site. Some weeds may provide long-term competition, but many others will be outcompeted as seed mixes establish. In general, control efforts will focus on perennial, rhizomatous (spreading by root system) weeds that can quickly dominate a site, such as Canada thistle, spotted knapweed, and common tansy which will be managed by both mowing and spot treatments of herbicide. Healthy plantings will (generally) out compete annual weeds quickly. Annual weeds will be managed through mowing and/or grazing where appropriate. If large noxious weed infestations occur requiring boom spraying, the area(s) will be subsequently reseeded.

Non-native, cool season grasses such as Kentucky bluegrass, smooth brome or reed canary grass may establish. These grasses will not be controlled because they meet the project vegetation establishment goal of creating a perennial vegetative cover under the arrays while minimizing herbicide use. These plant species are low growing, respond well to mowing, and create a complete groundcover. Some naturalized weed species, such as dandelion, mustards, and clovers, are also non-native but provide pollinator habitat and other ecosystem services such as soil decompaction and nitrogen fixation. These species will not be controlled.

Vegetation Management Techniques
A variety of management techniques may be implemented on the Louise Solar Project site. They will be selected based on the adaptive management decision making process. The techniques described below will be identified by qualified plant ecologists during monitoring site visits and implemented as necessary. All weeds on the MN Noxious Weed List and the relevant county Noxious Weed Lists will be managed per the weed designation category of the list, i.e., eradicate or control.

Mowing
Mowing may be used when vegetation reaches a height of approximately 20 inches. The vegetation will then be mown to a height of 6-8 inches from the ground. The most effective mowing height and timing, however, is species dependent. Some species are best mown at 36 inches and others at 12 inches depending on their reproductive morphology. For best results, weeds are mown when they are flowering or about to flower. Adaptive management will allow managers to be flexible in mowing height, timing, and location.

Wet areas pose challenges for mowing because water limits access and also increases the risk of mowing equipment damaging the soil and potentially destroy plants through rutting. Therefore, mowing in low areas will occur only when conditions are dry, or mowing may be avoided altogether. Periodic onsite evaluations will determine wet area mowing regimes. Weed whipping may be used to protect solar equipment from exuberant vegetation growth to maintain safe and efficient array operation. This will be directed by the Owner.

Grazing
Grazing can provide a natural approach to weed management (compared to herbicides and mowing) and may allow for better control of weeds where vehicle access is limited either due to saturated soils (spring

and after large rain events) or because of permanent structures (under arrays, around poles, and near buildings). This management technique will require contracting with a local farmer to provide the sheep and manage the grazing.

Sheep may be used experimentally where grazing may prove to be a more viable long-term management strategy. Site-specific grazing plans will be developed where grazing will be used that will include information on the stocking rate, pasture rotation, and water placement if a sheep farmer is available for contracting.

Herbicide Treatment

Herbicides are an effective weed management tool. Their use will be employed where it is determined that mowing alone will not accomplish perennial weed control. Specific herbicides will be carefully selected to target noxious weed species needing control considering their extent of growth. Directions on the herbicide label will be carefully followed and will not be broadcast sprayed. Herbicides will be limited to cool season application; spring and fall. Only Minnesota-licensed Pesticide Applicators will apply herbicides on the Louise Solar Project site.

Supplemental Seeding

Supplemental seeding may be necessary where vegetation establishment has not been successful. Seed failure can occur for a variety of reasons from soil conditions to flooding to competition. It may be necessary to adjust the seed mix species to best fit the growing conditions of an area. The restoration contractor will work with the Owner to choose the appropriate seed mix for seeding temporarily disturbed areas (such as excavating or trenching required for repair or maintenance work) after all construction activity has been completed. If areas need to be continually impacted by maintenance activities (such as travel paths), they may be seeded with species that can tolerate a higher level of disturbance.

Soil Management

Erosion Control

Standard erosion control techniques will be used as necessary to address erosion and to stabilize disturbance areas. Establishment of a cover crop is the preferred erosion control method; oats or winter wheat will be sown as appropriate. Erosion control best management practices will be used as necessary when seeding disturbed areas. The methods or practices selected will be appropriate for the level of disturbance and expected runoff volumes. Additional erosion control methods may include:

- Hydromulch, such as bonded fiber matrix, for areas where quick stabilization is necessary
- Erosion control blankets with a minimum 6-month service life
- Disc anchored straw
- Sediment control logs
- Silt fence

Compacted Soils

If soils are determined to be compacted and result in poor vegetation growth, tilling to a depth of four inches or ripping, if safely away from buried utilities, may be performed. Over time, freeze/thaw cycles and plant roots introduce porosity to the soil.

New Spoil Piles

Future work may create topsoil and subsoil spoil piles. When necessary, excess subsoils will be segregated and capped with topsoil and seeded. Subsoil may also be moved offsite and disposed of according to state and local law. Topsoil piles will either be seeded or spread out onsite and seeded. Topsoil piles will not be removed from the sites.