Appendix D

Agricultural Impact Mitigation Plan

AGRICULTURAL IMPACT MITIGATION PLAN

Coneflower Solar Project

Lyon County, Minnesota

AUGUST 15, 2024

PREPARED FOR:

APEX CLEAN ENERGY

PREPARED BY:

Westwood

Agricultural Impact Mitigation Plan

Coneflower Solar Project

Lyon County, Minnesota

Prepared For:

Coneflower Energy, LLC
8665 Hudson Blvd North, Suite 200
Lake Elmo, MN 55042
(612)-315-6173

Prepared By:

Westwood Professional Services, Inc.
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: 0042396.00
Date: August 15, 2024

Westwood

Abbreviations and Definitions

ac	Alternating Current
AIMP or Plan	Agricultural Impact Mitigation Plan
Apex	Apex Clean Energy Holdings, LLC
BMPs	Best Management Practices
BWSR	Minnesota Board of Water & Soil Resources
CO_2	Carbon Dioxide
Commission or PUC	Minnesota Public Utilities Commission
Coneflower, Coneflower Solar, or Applicant	Coneflower Energy, LLC
Construction Manager	Person responsible for coordination and supervision of construction of the Project
Contractor	Construction Contractor
DC	Direct current
Decompaction	Treatment which relieves soil compaction by introducing air space into the soil.
DOC	Minnesota Department of Commerce
Drain tile	System that removes excess water from the soil; typically, belowground.
EERA	Energy Environmental Review Analysis
Garvin Scenario	The Project will interconnect to Xcel Energy's proposed Garvin Substation, the terminus of the proposed Minnesota Energy Connection 345 kV transmission line.
GPS	Global positioning system
HVTL	High Voltage Transmission Line
kV	kilovolt
kVA/kW	Kilovolt-amperes/kilowatt
LCC	Land Capability Class
Lyon SWCD	Lyon County Soil and Water Conservation District
LYW	Lake Yankton Watershed
MDA	Minnesota Department of Agriculture
MISO	Midcontinent Independent Transmission System Operator Standards
MISO Scenario	The Project will interconnect to the Lyon County to Lake Yankton 115 kV transmission line that bisects the northern portion of the Project Area.
MnDNR	Minnesota Department of Natural Resources
MNL	Minnesota Native Landscapes

Monitor	Environmental monitor
MPCA	Minnesota Pollution Control Agency
MW	Megawatts
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NTLCRW	North Twin Lake-Cottonwood River Watershed
O&M	Operations and Maintenance
Owner	The Project owner at time of decommissioning
Project	Coneflower Solar Project (a photovoltaic solar energy conversion project)
Project Area	Site; Approximate 2,299 acre area of privately-owned land for which Coneflower Energy, LLC has lease and easement agreements to allow construction and operation of the Project
Project Footprint	Approximate 1,723-acre area where Coneflower Energy, LLC proposes to build the Coneflower Solar Project facilities
Project Plant Manager	Manager of the Project while the Project is in operation
Project Substation	A 34.5/161 kV or 34.5 to 345 kV step-up substation
PV	Photovoltaic
ROW	Right-of-Way
SCADA	Supervisory Control and Data Acquisition
SPA	Site Permit Application
SSURGO	Soil Survey Geographic Database
SWPPP	Stormwater Pollution Prevention Plan
VMP	Vegetation Management Plan

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1.0 Purpose and Applicability of Plan

The objective of this Agricultural Impact Mitigation (Plan or AIMP) and the associated Vegetation Management Plan (VMP) is to identify measures that Coneflower Energy, LLC (Coneflower, Coneflower Solar, or Applicant) and its contractors will take to avoid, minimize, mitigate, and/or repair potential negative agricultural impacts that may result from the construction, operation, and eventual decommissioning of the Coneflower Solar Project (Project)[1]. The Project is a proposed up to 235 megawatt (MW) alternating current (ac) photovoltaic (PV) solar energy generating facility with other associated facilities. The Project is planned to be sited on approximately 2,299 acres of farmland (Project Area) located in Sections 7, 16-22, and 27, Township 109N, Range 41W, Custer Township in Lyon County, MN (**Exhibit 1**). The Plan is also being prepared in support of the Site Permit Application (SPA) that will be submitted to the Minnesota Public Utilities Commission (Commission or PUC) in the third quarter of 2024. Coneflower Solar anticipates the Commission will make a decision on whether to issue a site permit in the third quarter of 2025.

Coneflower Solar has lease or easement agreements for the property on which the Project will be constructed and operated. Agricultural land use/production of the areas developed for the Project will temporarily cease during the 30-year life of the Project. This Plan outlines measures to ensure the Project Area land may be returned to future agricultural use following the closure and decommissioning of the Project, including descriptions of best management practices (BMPs) that will be used during construction to minimize long-term impacts to soil. It is important to note that while Coneflower Solar and the construction contractor (Contractor) hired to build the facility fully intend to adhere to the specifics of this Plan, certain practices may vary as the Contractor identifies methods that work more efficiently in this specific location and provide the highest degree of safety while constructing the facility.

The Plan includes establishing beneficial plant species within the Project perimeter fence which will be installed around the planned Project PV solar arrays. Locally established perennial plant species will be selected to be low growing, thrive in shade conditions, and not interfere with the operation of the solar panels yet provide benefits to the soil. Typically, a solar site has a shorter predominately native seed mix within the solar arrays, a taller native seed mix in the open space between the fence and arrays, and a wet seed mix for wetlands or areas anticipated to retain water. The seed mixes are developed with recommendations from plant specialists in coordination with the Minnesota Department of Agriculture (MDA), Minnesota Department of Natural Resources (MnDNR), Minnesota Board of Water & Soil Resources (BWSR) and Lyon County Soil and Water Conservation District (Lyon SWCD), as applicable, as described in the VMP concurrently being implemented with this Plan for the Project.

The purpose of the Plan is to determine a seed mix design that will achieve the goals Coneflower Solar has for efficiently operating the Project, promote nature positive habitat, establish stable perennial ground cover, suppress weeds, reduce soil erosion and runoff, improve water infiltration, and work in conjunction with the VMP, National Pollution Discharge Elimination System

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[1] Note the VMP is a standalone document that works in conjunction with the AIMP, the NPDES construction stormwater permit/Stormwater Pollution Prevention Plan (SWPPP) and related construction-related approvals/permits and design plans.

(NPDES) construction stormwater permit, Stormwater Pollution Prevention Plan (SWPPP), and related construction plans.

Coneflower Solar will utilize an adaptive management approach[2] for vegetation management as further detailed in the VMP and described in the *Guidance for Developing a Vegetation Establishment and Management Plan for Solar Facilities;* the VMP was prepared in consultation with Minnesota Native Landscapes (MNL), an experienced vegetation and restoration company, with input from the MDA, MnDNR, and the Minnesota Department of Commerce (DOC). MNL worked with Coneflower Solar to develop plans in the VMP for maintenance of the Project site's plantings throughout the life of the Project. More information on maintenance of the plantings is outlined in the VMP.

This Plan is separated into the following sections: Section 2 provides an overview of the proposed Project and its components; Section 3 addresses limitations and suitability of the soils within the Project Area; Section 4 discusses the BMPs that will be used during construction and operation of the Project; and Section 5 outlines Project decommissioning.

2.0 Project Overview

2.1 Background

Coneflower Energy, LLC, an indirect wholly owned subsidiary of Apex Clean Energy Holdings, LLC (Apex), proposes to construct and operate the Coneflower Solar Project on approximately 2,299 acres of farmland located in Sections 7, 16-22, and 27, Township 109, Range 41, Custer Township in Lyon County, MN (**Exhibit 1**). Coneflower Solar anticipates that approximately 1,723 acres (Project Footprint) will be affected by Project facilities (**Exhibit 2**). The Project lies just west of US Highway 59, is bordered by 230th Avenue/County Highway 63 on the west, and 140th Street borders most of the northern Project Boundary but also intersects a portion of the northwestern Project Area. It is just north of the City of Garvin, Minnesota. The Project will provide up to 235 MWac of renewable power capacity. This is enough energy to provide electricity for approximately 49,000 households based on the average annual electricity consumption, as well as prevent emissions of approximately 391,579 short tons of carbon dioxide (CO_2) equivalent annually.

The SPA will be submitted to the Commission during the third quarter of 2024. The Site Permit is expected to be issued by the PUC in the third quarter of 2025. Construction of the Project would begin in the second quarter of 2026. The Project is planned to be placed in service late 2027.

The Project will interconnect to the Lyon County to Lake Yankton transmission line that bisects the northern portion of the Project Area (MISO Scenario). The Project is also uniquely positioned within one-half mile of Xcel Energy's proposed Garvin Substation, the terminus of the proposed Minnesota Energy Connection 345 kilovolt (kV) transmission line (Garvin Scenario) (Minnesota

[2] As defined by the U.S. Department of the Interior (DOI), adaptive management (also known as adaptive resource management or adaptive environmental assessment and management) is a systematic approach for improving resource management by learning from management outcomes. It is a structured, iterative process of robust decision making in light of uncertainty, with an aim to reducing uncertainty over time via system monitoring. See Technical Guide (doi.gov).

DOC, 2024). This transmission line is proposed to deliver new renewable energy to customers to replace retiring coal plants. In this early stage, both interconnection options are viable and under consideration by Coneflower. The MISO Scenario would be located in the north-central portion of the Project area, and interconnection would take place by connecting to the Lyon County to Lake Yankton 115 kV high voltage transmission line (HVTL) that bisects the northern portion of the Project Area boundary along 140th Street. The Garvin Scenario substation would be located in the eastern portion of the Project Area and connect to the proposed Garvin Substation at the terminus of the Minnesota Energy Connection 345 kV transmission line proposed and owned by Xcel Energy. Both substation options are shown in **Exhibits 3a and 3b**. Coneflower identified both of these substation sites due to their close proximity to their respective interconnection options and planned transmission facilities, available transmission capacity, existing road infrastructure, willing landowners, and the relatively flat, unobstructed terrain on the Project site. Additionally, in selecting the Project Area site, Coneflower also concluded that its development will not result in significant human settlement or environmental impacts.

The Project Area mainly consists of a gently rolling landscape with elevations generally ranging from 1,484 to 1,592 feet above mean sea level. This topography combined with highly fertile soils, favorable moisture holding characteristics, and usually adequate supplies of moisture from precipitation are well suited to agriculture and row crop production, which is currently the dominant land use for the Project Area.

Coneflower Solar has entered into lease and easement agreements with landowners for all of the parcels on which the Project solar arrays, inverters, collection lines, access roads and fencing would be constructed and operated and has 100% land control for these Project areas (**Exhibit 2**). All Project facilities shown in the preliminary project layout (**Exhibits 3a and 3b**) were sited on land for which Coneflower Solar has secured under lease and easement agreements. The Project Footprint is approximately 1,723 acres in size and is located within the overall Project Area. The current land interests under lease are sufficient to accommodate the Project's facilities and setback requirements.

2.2 Project Components

The Project will include the following major components, systems, and associated facilities:

- Solar modules (also referred to as panels or arrays) and tracking racking systems;
- Inverters;
- An electrical collection system;
- A Project substation and interconnection facilities;
- Gravel access roads;
- Perimeter fencing and gates;
- An operations and maintenance (O&M) building;
- Stormwater drainage basins; and
- Temporary facilities such as laydown areas, temporary site offices, parking, and improvements for storage and staging of equipment prior to installation as needed.

For the MISO Scenario, electrical cable will be buried below-ground for routing to the Project Substation where the electricity will be stepped up from 34.5 kV to 115 kV before traveling to an adjacent utility constructed, owned, and operated switching station and on to the existing Lyon County to Lake Yankton 115 kV transmission line. In the Garvin Scenario, the below-ground collection lines would also run to the Project substation on the east side of the Project Area where the electricity would be stepped up from 34.5 kV to 345 kV before traveling on a short (less than one mile) transmission line into Xcel Energy's proposed Garvin Substation (**Exhibits 3a and 3b**).

Each of these components is described in more detail below.

2.2.1 Configuration of Solar Panels, Arrays, and Racking

The Project will convert sunlight into direct current (DC) electrical energy within the PV panels. The proposed 60 inverter skids located throughout the Project (roughly 1 for every 4 MW) convert DC into a utility frequency AC to be fed into the Project Substation. For purposes of describing construction, the Project can be considered an aggregate of individual PV panel components interconnected by cabling and infrastructure at increasing scales to ultimately deliver up to 235 MWac of nameplate electricity to either the existing Lyon County to Lake Yankton 115 kV via a new MISO Scenario substation or the Garvin Scenario substation and gen-tie line (**Exhibits 3a and 3b**).

Project components are described below from smallest to largest scales and presented on **Exhibits 3a and 3b and 4**:

1) Individual PV panels are approximately 7.5 feet long by 3.7 feet wide by 1.18 inches thick and are installed on metal foundations that are driven or screwed into the ground.
2) Lines of interconnected PV panels consist of a line of short-edge butted panels approximately 310-feet long, with each line oriented to and rotating along a north-south axis to track the east-west movement of the sun and maximize the interception of solar energy. These lines represent the racking upon which the individual panels are mounted.
3) Arrays of north/south lines of PV panels organized in a collection of lines associated with a grid network of access roads.
4) Inverters convert the DC collected from the arrays into AC and feed into the electrical collection system.
5) Rows of racking typically consist of one or two arrays north, and one or two arrays south of a permanent access road connecting to an inverter. Depending on site constraints, there may be fewer arrays associated with a specific group. Perimeter access roads may be present on the east and west sides of individual groups.
6) Construction Units consist of groups of PV panels delineated by their connectivity and relationship to main roads (**Exhibit 4**). For the purposes of the AIMP, the Project consists of:
    - Unit 1: a 91-acre (approximate) unit bounded by 230th Avenue to the West and 140th Street to the South

- Unit 2: a 647-acre (approximate) unit bounded by 230th Avenue to the West, 140th Street to the north, US Highway 14 to the South, and 240th Avenue to the East
- Unit 3: a 637-acre (approximate) unit bounded by 240th Avenue to the West, 140th Street to the north, US Highway 14 to the South, and 250th Avenue to the East
- Unit 4: a 345-acre (approximate) unit bounded by 140th Street to the north, 260th Avenue to the East, and US Highway 14 to the South
- Unit 5: a 166-acre (approximate) unit bounded by US Highway 14 to the north and 240th Avenue to the East
- Unit 6: a 564-acre (approximate) unit bounded by 240th Avenue to the West and US Highway 14 to the north
- Unit 7: a 130-acre (approximate) unit bounded by US Highway 14 to the north and 260th Avenue to the East
- Unit 8: a 336-acre (approximate) unit bounded by 260th Avenue to the West, US Highway 14 to the north, and 120th Street to the South
- Unit 9: a 160-acre (approximate) unit bounded by 265th Avenue to the West, 120th Street to the north, and US Highway 59 to the East

7) Approximately 27.6 miles (MISO Scenario) or 35.0 miles (Garvin Scenario) of electrical collection lines will be installed throughout the Project and underneath County Road 7, 240th Avenue, 260th Avenue, 120th Street, 140th Street, and US Highway 14, connecting all inverters to the Project Substation.

Coneflower Solar will use a horizontal single-axis tracking system where the panels within a line are rotated by small motors to track with the sun throughout the day. The panels aligned in north – south rows face east in the morning, parallel to the ground during mid-day (i.e., horizontal position), and then west in the afternoon. Panels can be manually oriented to the east or west at maximum tilt angle to facilitate maintenance access and vegetation management, if necessary. The current preliminary design has typical spacing between the panel edges when at a horizontal position of approximately 15 feet, which is sufficient for maintenance vehicles. This distance may change in the final design; Coneflower will maintain a minimum of 8 feet clear row spacing, the minimum for clear row spacing and maintenance vehicles. Separation of PV panel lines will typically be 23 feet from turning axis to turning axis (**Exhibits 3a and 3b**).

2.2.2 Inverters, Transformers, and Electrical Collection System

Electrical wiring will connect the PV panels to inverters which will convert solar energy generated power from DC to AC. Power inverters convert approximately 1.5 kV of DC power output from the PV solar panels to approximately 4,400 kilovolt-amperes/kilowatt (kVA/kW) of AC power based on the SG4400UD-MV-US inverter used in the preliminary design. A step-up transformer then converts the inverter AC voltage to an intermediate voltage of 34.5 kV which is brought via underground collection cables to the Project Substation. Step-up transformers are located with each of the inverters. The DC electrical collection system from the PV panels to the inverters will be underhung below the panels and racking (above ground electrical collection system), which in most instances will also have some segments buried below-ground (combined above and below-ground electrical collection system). The AC electrical collection system from the inverters/step-up transformer to the Project Substation will be buried approximately four feet below ground.

2.2.3 Inverters and Step-Up Transformers

The AC electrical collection cabling will be installed approximately four feet below-ground. Inverter skids will be utilized at locations throughout the Project Footprint and include a step-up transformer to which the inverters will feed electricity. The final number of inverters for the Project will depend on the inverter size, as well as inverter and panel availability. The Project's preliminary design has 60 central inverter skids.

Skids provide the steel foundation for the enclosed inverter, step-up transformer, and Supervisory Control and Data Acquisition (SCADA) systems. The height of a skid is approximately 12 feet above grade. The skids will be placed atop a poured reinforced concrete slab or pier foundations and will typically measure 15 feet wide by 20 feet long. Concrete foundations will be poured onsite or precast and assembled off-site. The inverters skids are located within the interior fenced portion of the Project along access roads.

The Project has been designed with Sungrow Power Supply Co. SG4400UD-MV-US inverters; however, other inverters may be used when final equipment selections are made prior to construction. Coneflower Solar will consider the costs and performance of each option as well as environmental and safety standards when making its final selection. For the purposes of generation estimates, Coneflower Solar has modeled the Sungrow Power Supply Co. SG4400UD-MV-US.

2.2.4 Combined Above and Below-ground Electrical Collection System

As indicated above, the solar panels deliver DC power to the inverters/step-up transformers through cabling that will be located underhung beneath the PV panels and racking in a hanging harness system or installed on piles above ground. Below-ground AC electrical collection lines will transfer the converted 34.5 kV AC electricity from the inverter equipment to the Project Substation.

During trench excavations for the AC collection system, the topsoil and subsoil will be removed and stockpiled separately in accordance with Section 4.7 of this Plan. Once the electrical collection lines are laid in the trench, the trench will be backfilled with subsoil followed by segregated topsoil.

A combined above and below-ground electrical system is being considered for the Project for several reasons, including ease of access for operations and maintenance, reduced ground disturbance, and cost considerations.

2.2.5 Project Substation and Operations and Maintenance Building

The Project will include an on-site Project Substation that combines all the AC power from the above-described 34.5 kV collection circuits where it will convert the power through a step-up power transformer from 34.5 kV to 115 kV (MISO Scenario) or 34.5 kV to 345 kV (Garvin

Scenario). Coneflower is currently considering two potential options for the Substation. The MISO Scenario substation would be located in the north-central portion of the Project Area, and interconnection would take place by connecting to the Lyon County to Lake Yankton 115 kV overhead transmission line that bisects the northern portion of the Project Area boundary along 140th Street. In the Garvin Scenario, the Project Substation would be located in the eastern portion of the Project Area and connect to an off-site Xcel Energy substation which would interconnect onto the grid by a currently proposed transmission line owned by Xcel Energy. Both substation scenarios are depicted in **Exhibits 3a and 3b**.

The Project Substation will be designed according to Midcontinent Independent System Operator (MISO) Standards, and Generator Interconnection Agreement standards. The Project Substation will occupy approximately 5 acres (470 feet by 470 feet), although the final footprint after construction will be approximately 2-3 acres that will be fenced with a controlled access gate (**Exhibits 3a and 3b**). Fencing is described below. The ground surface area within the fenced Project Substation site will be graveled to minimize vegetation growth, reduce fire risk, and act as a safety measure for grounding purposes. Final dimensions of the Project Substation will depend on equipment selection, engineering, and design specifications.

If the Project moves forward with the Garvin Scenario, the Project will interconnect onto the off-site proposed Garvin Substation and there will be no on-site switchyard. If the Project moves forward with the MISO Scenario, the proposed switchyard would be located adjacent to the Project Substation (**Exhibit 3a**). The Project Substation will be fenced with a lockable gate (fencing is described below).

An O&M Building will provide for Project maintenance and operations as well as storage of equipment, tools, materials, etc. The O&M Building will be located adjacent to the Project Substation (**Exhibits 3a and 3b**). The facility will be located on approximately 3.0 acres and the building will likely be constructed of metal. It will contain an office for an on-site Project Plant Manager, a technician room, restroom, and storage area/maintenance shop for equipment to operate and maintain the Project. The building will be used to conduct maintenance and repair of Project equipment and solar module components, store parts and other equipment, store other operation and maintenance supplies (e.g., materials for cleaning modules, etc.), as well as safety equipment for working with live electricity and materials/supplies necessary for vegetation management. The O&M building will be locked when not in use by Project staff and it will also house the SCADA system that will remotely monitor Project facilities. A domestic water well and septic system will be constructed to provide water and sanitary service to the O&M building.

Parking will be made available to employees but is not currently designed. The final size will be determined in accordance with the Lyon County Ordinance and Site Permit. The parking lot is expected to be approximately 3,000 square feet.

2.2.6 Access Roads

The Project will include approximately 15 miles of graveled access roads that lead to the panels and inverters, Project Substation, and O&M Building (**Exhibits 3a and 3b**). The final length of the access roads will depend on the equipment selected and final engineering/design. The internal roads will be up to 20 feet wide during construction and operations. Some of the roads will be wider along curves at internal road intersections (approximately 35 feet). There will be 28 access points initially constructed under the MISO Scenario and 25 access points under the Garvin Scenario. The access point entrances will be constructed from public roads on temporary and permanent access roads throughout the Project Footprint. Temporary access roads will only be used to access the two temporary laydown yards that are outside the fence. All other access points with access roads leading to areas within the fence (solar panels, substations, and the O&M Building) will be permanent for the life of the Project. Coneflower anticipates removing two access points under each Scenario for a total of 26 permanent access points under the MISO Scenario and a total of 23 permanent access points under the Garvin Scenario. (**Exhibits 3a and 3b**). The entrances into fenced areas of the Project and the Project Substation will have controlled and lockable gates for site security and safety. For the majority of the Project, entrances off of public roads are the same between Scenarios; the difference is separate entrances for the Project Substation, Switchyard, and O&M Building in the MISO Scenario whereas in the Garvin Scenario, the Project Substation and O&M Building are accessed by an entrance that also serves a solar panel area. All entrances will have locked gates.

Upgrades or other modifications to the existing public roads may be required for construction entrances or operation of the Project. Coneflower Solar will work with Lyon County, Custer Township, and other local road authorities, as applicable, to facilitate public road upgrades that meet the required standards. Coneflower Solar will continue to coordinate with Local, County and State agencies as the Project develops. Driveway changes utilizing County roadways will require a new or modified driveway or entrance permit from Lyon County, which will be obtained prior to construction. Coneflower Solar will also work with Lyon County in the event a road use agreement or similar approval is deemed necessary for the Project.

2.2.7 Security Fencing

Permanent security fencing will be installed along the perimeter of each grouping of the solar modules (**Exhibits 3a and 3b**). Fencing will consist of a lightweight agricultural woven wire (containing wire "knots" wrapped around each intersecting wire) secured to wooden posts which will be directly embedded in the soil or set in concrete foundations as required for structural integrity. The fencing will extend a maximum total height of approximately 8 feet above grade. Barbed wire will not be used at the top of the fence around the solar modules; instead one to two feet of 3 to 4 strands of smooth wire will be used. Additionally, lockable gates will be placed along the fence line, and security cameras may be used. This fencing will be designed to prevent the public and larger wildlife from gaining access to electrical equipment which could cause harm or injury.

Permanent 6-foot-tall chain-link security fencing, with one foot of barbed wire at the top, will also be installed along the perimeter of the Project Substation and O&M Building to comply with applicable electrical codes. Lockable gates will also be installed on the fencing.

2.2.8 Stormwater Drainage Basins

Coneflower Solar has preliminarily designed 78 drainage basins throughout the Project Footprint that range in size from approximately 0.02 acre to 1.06 acres that will manage stormwater runoff from the Project during operation (**Exhibits 3a and 3b**). These basins are generally located in existing low areas that also contain hydric soils and for which the preliminary design for solar facilities has avoided. Basin locations and sizes are the same for both the MISO and Garvin Scenarios. Due to the existing topography and drainage patterns, Coneflower has designed a higher quantity of smaller stormwater basins across the Project Footprint instead of fewer, larger stormwater basins. These areas will be vegetated with a wet seed mix that will help stabilize soils after rain events. The size and location of stormwater drainage basins will be finalized concurrent with final engineering.

2.2.9 Transmission System

As previously discussed, the Project has two interconnection opportunities: the Lyon County to Lake Yankton transmission line that bisects the northern portion of the Project Area (MISO Scenario) and the proposed Garvin Substation half mile east of the Project Area (Garvin Scenario). In the MISO Scenario, the interconnecting utility will permit, construct, own, and operate a switching station immediately adjacent to the Project substation and up to 500 feet (a single span) of 115 kV transmission line to interconnect into the existing Lyon County to Lake Yankton 115 kV transmission line. In the Garvin Scenario, a short (up to one mile, depending on final location of the Garvin substation) 345 kV transmission line will be needed. The Garvin Scenario will require a route permit from the Commission but is first dependent on the Commission's approval of the Garvin substation in a separate proceeding (Docket TL-22-132) (Minnesota DOC, 2024) and Xcel Energy's interest in, selection, and Commission approval of the acquisition of Coneflower Solar. Therefore, Coneflower Solar will submit a Route Permit, if needed, at a later time.

2.2.10 Temporary Construction Facilities

During construction of the Project, Coneflower Solar will utilize 17 temporary construction laydown areas within the Project Area totaling 59.9 acres (**Exhibits 3a and 3b**) These areas will serve both as a parking area for construction personnel and staging areas for Project components and office trailers during construction. Silt fencing will be used downstream of all disturbed areas throughout the site which should be considered such as the fence line plus a buffer, access road entrances, laydown yards, as well as the Project Substation, interconnection, and O&M Building. The 15 laydown areas within each fenced block of panels will stage components for that block before transitioning to racking and panels. The two laydown areas outside the fence will be restored to pre-construction conditions and suitable for agricultural use by the landowner or restored with a native seed mix. All 17 laydown areas have been sited to avoid any tree clearing.

2.3 Construction

2.3.1 Site Clearing & Vegetation Removal

The start of construction is planned to begin in the second quarter of 2026 subject to permitting and other factors. A majority of the area to be developed with Project facilities within the Project Area are agricultural fields and contain little other vegetation or other natural features (**Exhibit 1**). Depending on timing of the start of construction, the Project may require the clearing of residual row-crop debris from farm fields. Alternatively, and depending on construction timing, Coneflower

Solar may plant a cover crop in Spring 2026 that is compatible with the Project VMP. This cover crop would stabilize soils if row crops were not planted that year.

2.3.2 Earthwork

Grading will need to occur on the site based upon site topography, design, and engineering factors. The majority of soil disturbances will occur during the first phase of Project construction when grading takes place. The Contractor may need to move soils in some areas to “flatten” parts of the Project site or to complete minor grading of topsoil to lessen further disruption and avoid erosion. The earthwork activities will be completed using typical earthmoving construction equipment – scrapers, bulldozers, front-end loaders, back-hoes, and skid-steers. BMPs that will be used during these earthmoving activities are described in detail in Section 4.5.

Topsoil handling will first include stripping topsoil that sits higher than other areas that need to be leveled. Topsoil will be pushed outside of the cut/fill areas and collected into designated spots for later use. Once topsoil is removed from the cut/fill areas, the subgrade materials will be removed as required from on-site hills and relocated to on-site low spots. Prior to relocating subgrade materials to the low spots, topsoil in the low areas will be stripped and set aside before the fill is added, then re-spreads over the new fill. The subgrade materials would be compacted in place. When compaction is complete, the topsoil spoil piles will be re-spread over the reconditioned sub-grade areas.

Subsoil handling will be similar to the handling of topsoil as described in the above sections. Excess subsoil that comes from site grading will be segregated and relocated to low spots (see Section 3.2.4.3 below). Low spots will be filled after topsoil is stripped and set aside and then re-spread over the new fill.

2.3.3 Access Road Construction

As a component of earthwork, permanent Project entrances, access roads and turnouts will be constructed to support the Project as indicated in **Exhibits 3a and 3b**. This work would start with the stripping and segregating of topsoil materials from the proposed roads. The Contractor will then compact the subgrade materials typically 20-feet wide to the specified compaction requirements as laid out by the civil and geotechnical engineer. After suitable compaction levels are reached and verified, the Contractor will then install the road as designed, typically done with or without geo-fabric depending on the soil type and then a surface of four to 12 inches of gravel. The gravel will be placed level with the existing grade to facilitate drainage and minimize ponding. After the road surface is compacted, the Contractor will shape Project drainage ditches as designed on the grading plan.

Coneflower Solar has chosen flatter areas within the Project Area to support Project infrastructure thus minimizing the amount of topsoil that will need to be removed due to grading. Topsoil removed from permanent access roads will be removed to suitable locations near the site of removal and graded for storage. Storage locations will be identified (global positioning system [GPS] boundary and depth) and recorded on site maps to facilitate final reclamation as part of decommissioning.

2.3.4 Solar Array Construction

After grading activities are complete, the racking system supports will be constructed using steel piles driven into the ground. In some situations where soils are low strength or consist of loose, non-cohesive sand, helical screw or auger-type foundation posts may be used. Foundations are typically galvanized steel and used where high load bearing capacities are required. The pile is driven using a hydraulic ram or screw installer that moves along tracks, which requires two workers. Soil disturbance for this task would be negligible since the solar pile driver equipment does not excavate soil. The pile driving equipment is about the size of a small tractor. It is equipped with tracks to disperse its weight over a larger ground surface and reduce soil disturbance, rutting and compaction.

The remainder of the racking system will be installed by construction crews using hand tools and all-terrain tracked equipment to distribute materials. Array racking will be bolted on top of the foundation piling to create a “rack” to which the solar panels can be fastened.

During array and racking assembly, multiple crews and various types of vehicles will be working within the Project Area. To the extent practicable, vehicular traffic will be limited to permanent and temporary access roads to minimize soil disturbance, mixing, and compaction. These vehicles include flatbed trucks for transporting array components, small all-terrain vehicles, and pick-up trucks used to transport equipment and workers throughout the Project Area. Panels will be staged in advance throughout the Project Area and be brought to specific work areas for installation by wagon-type trailers pulled by small tractors or by all-terrain tracked equipment. The solar panels will be installed by multiple crews using hand tools. Installation crews will proceed in a winding path along staked temporary access roads in a pre-established route to minimize off-road traffic.

2.3.5 Electrical Collection System

The collection system will be both above and below ground. The DC collection cables will be strung under each row of panels or suspended above ground via the hanging harness system, and the AC collection will be buried belowground from the inverter/transformer skid to the Project Substation. Part of the underground collection system will be horizontally directionally drilled under 240th Avenue, 260th Avenue, US Highway 14, 120th Street, and 140th Street.

The electrical collection system cabling will be installed using a trenching machine or excavator. The trencher will cut an exposed trench. Cabling will be installed to a depth of four feet. Prior to trenching, the upper 12 inches of topsoil will be stripped from the trench and temporarily stockpiled using a small backhoe. After cables are installed, the trenches would be backfilled, first with subsoil removed. Stockpiled topsoil would be replaced over the subsoil in sufficient quantities to ensure restoring the trench to the original grade after settling. BMPs that will be used during these earthmoving activities are described in detail in Section 4.7.

Measures to mitigate potential activities and conditions that could cause water pollution, such as trenching, will be outlined in the construction stormwater permit and associated SWPPP to be prepared and implemented during the construction of the Project.

2.3.6 Inverter Installation

Inverter installation will begin with topsoil removal; topsoil will be scraped and stockpiled at designated locations and graded to facilitate revegetation. The inverter units will then be placed on frost-footing supported concrete pads or on driven/helical screw pier foundations that will be designed to specifications necessary to meet the local geotechnical conditions. A truck with a flatbed trailer will deliver the premanufactured skids with an inverter, step-up transformer, and SCADA equipment to each inverter foundation. They will typically be set in place using a rough-terrain type hydraulic crane.

2.3.7 Project Substation Construction

Construction work within the proposed Project Substation will begin by scraping and segregating topsoil and placing it in a designated location. Refer to Section 4.2 for notes on soil segregation. Additional site preparation will include installation of substructures and electrical equipment. Installation of concrete foundations and embedments for equipment will require the use of trenching machines, concrete trucks, pumpers and vibrators, forklifts, boom trucks, and cranes. Above-ground and below-ground conduits from this equipment will run to a control enclosure that will house the protection, control, and automation relay equipment. A station service transformer will be installed for primary AC power requirements. Batteries and battery chargers will be installed inside the enclosure providing power to the switch stations control system. Crushed rock will be placed between and among installed substation equipment and adequate lighting will be installed around the Project Substation site for worker safety during construction and operation.

Project Substation foundations will typically be installed using one of two methods as follows: Method 1 would be to use a small rubber tire backhoe to excavate major foundations prior to pouring the concrete slabs; and Method 2 would use an auger/drill type machine for minor foundations.

Using either method, the disturbance limit will be within the footprint of the Project Substation for both the foundation equipment and the concrete delivery trucks. BMPs that will be used during these earthmoving activities are described in Section 4. Topsoil removed from the Project Substation will be segregated from the subsoil and preserved in a designated location for later restoration during Project decommissioning. The topsoil stockpile area(s) would be near the location where it was removed, accurately located (GPS boundary, soil depth) and graded to facilitate long term preservation and revegetation. Subsoil would be removed and re-used as needed or to an acceptable pre-established and approved area for storage. As part of later decommissioning, subsoil would be replaced first (as needed), followed by topsoil placement. The soil would be replaced and brought back to pre-construction contours to allow for farming.

2.3.8 Stormwater Drainage Basins

Similar to Project Substation construction described above, drainage basins would have topsoil removed and temporarily stored in a pre-established suitable location. Excavated subsoil would be distributed throughout the site as fill material in areas where grading is required. Topsoil would be replaced, and the basins vegetated with a wet seed mix that will also help stabilize soils after rain events. Current design plans include 78 stormwater drainage basins in both the MISO and

Garvin Scenarios (**Exhibit 3**); the final number, size, and location of stormwater drainage basins will be based on final engineering. Due to the existing topography and drainage patterns, Coneflower has designed a higher quantity of smaller stormwater basins across the Project Footprint instead of fewer larger stormwater basins.

2.3.9 Project Fencing Installation

The Contractor or a subcontractor fencing company will be engaged to construct the perimeter security fencing around the Project construction units and the Project Substation as described above. The fencing around the PV solar arrays will consist of an agricultural woven wire fence topped with one foot of 3-4 strands of smooth wire, for a total of a maximum of 8 feet above grade.

Permanent 6-foot-tall chain-link security fencing, with one foot of barbed wire at the top, will also be installed along the perimeter of the Project Substation and O&M Building to comply with applicable electrical codes. High voltage warning signs and lockable gates will also be installed on the fencing. The Project site fencing will have lockable doors and gates installed, as needed to secure the Project and prevent unauthorized access to Project facilities and equipment.

3.0 Limitations and Suitability of Site Soils

In general, soil types can vary considerably in its physical and chemical characteristics that strongly influence the suitability and limitations that soil has for construction, reclamation, and restoration. Overall major soil properties include:

- Soil texture;
- Drainage and wetness;
- Presence of stones, rocks, and shallow bedrock;
- Fertility and topsoil characteristics; and
- Slope.

Interpretative limitations and hazards for construction and reclamation are based to a large degree on the dominant soil properties, and include:

- Prime farmland status;
- Hydric soil status;
- Susceptibility to wind and water erosion;
- Susceptibility to compaction;
- Fertility and Plant Nutrition; and
- Drought susceptibility and revegetation potential.

3.1 Land Use Considerations

Based on an aerial imagery and written history regarding the Project Area, nearly all of the Project Area and surrounding land has been in agricultural use for decades (University of Minnesota, 2015). Much of the Project Area was farmland in the early 1900s as shown in **Exhibit 5**. The Project Area was originally settled in mid-1868 (Lyon County Museum, 2024). The Project Area is located within the Lake Yankton Watershed (LYW) and the North Twin Lake-Cottonwood River Watershed (NTLCRW), as shown in **Exhibit 6**. Most of the land in these watershed areas is cultivated cropland.

In terms of farmland classifications, the majority of Lyon County is made up of all areas are prime farmland (47.6%), prime farmland if drained (31.7%), prime farmland if protected from flooding (3.4%) and farmland of statewide importance (7.5%). There are approximately 869 farms located within Lyon County that generally grow grains, oilseeds, dry beans, and dry peas (USDA, 2022). Coneflower Solar is planning to maintain the existing subsurface and surface drainage systems during Project construction and operation, with modifications limited to the extent required to avoid conflict with planned Project features such as foundation piles and piers. Coneflower Solar will work with landowners and the County to identify drain tile within the Project Area and Project Footprint and repair any drain tile that is damaged during development. Upon decommissioning of the Project and expiration of leases related to the Project, the land will be restored for agriculture use by participating landowners. Coneflower is committed to preserving the subsurface drainage infrastructure within the Project Footprint.

3.2 Important Soil Characteristics

The Soil Survey Geographic Database (SSURGO) is the digitized county soil survey and provides a GIS database relating soil map unit polygons to component soil characteristics and interpretations. Soil map unit polygons in the SSURGO database were clipped to the Project Area and internal infrastructure boundaries, including the major pieces of infrastructure:

- Access Roads
- O&M Building;
- Project Substation;
- Stormwater Basins;
- Laydown Yards; and
- Solar Array Area

The acreage of major Project features sharing physical properties, classifications, and limitation interpretations important for construction, use, revegetation, and reclamation were determined by spatial query of the GIS. Soils within the approximate 2,299-acre Project Area (**Exhibit 1**) but not anticipated to be affected by construction or operations are indicated in **Tables 1-6** below. Note that data obtained and shown in **Tables 1-6** below were done by merging facility polygons with the SSURGO spatial data in ArcGIS. Summations were performed in ArcGIS Pro and Microsoft Xcel. These areas are not included in the following analysis. The analysis includes the approximate 1,723-acre Project Footprint that will be affected by construction (**Exhibit 2**).

A soil map of the Project Area is provided along with a table of selected characteristics of site soils including physical properties, classifications, and construction-related limitations in **Appendices A and B**. **Appendix A** includes a table of soil characteristics that denotes the map unit symbols which can then be used to see the locations of different soils on the accompanying soil map in **Appendix B**.

3.2.1 Selected Physical Characteristics: Texture, Slope, Drainage and Wetness, Topsoil Depth, Bedrock and Presence of Stones and Rocks

There are approximately 2,299 acres within the Project Area. Selected physical characteristics of site soils are broken down by acreage within the 1,723-acre Project Footprint and the 576-acre area outside of the Project Footprint in **Table 1** and **Table 2**.

Soil texture affects water infiltration and percolation, drought tolerance, compaction, rutting, and revegetation among other things. Soil texture is described by the soil textural family which indicates the range of soil particle sizes averaged for the whole soil. Most of the soils within the Project Footprint (1,723 acres) are in the Fine (105 acres, 6.1 percent), Fine-Loamy (1,580 acres, 91.7 percent), and Sandy (32 acres, 1.9 percent) textural families, indicating medium-textured soils dominated by soil particles in the loam and silt fractions (between 0.002 and 3 mm) with fewer particles in the clay (<0.002 mm) and sand (>2 mm) fractions as shown in **Appendices A and B**. Medium-textured soils typically have good physical and available-water characteristics to support plant growth if not in excessively steep or wet conditions. They have high water-holding capacity, with most of the water being readily available for plant growth.

Slope affects constructability, water erosion, revegetation, compaction, and rutting, among other properties. Most of the soils (1,500 acres, 87.1 percent) within the Project Footprint are nearly level soils with representative slopes falling within the 0-5 percent slope range.

Table 1: Acreage of Soils with Selected Physical Characteristics – MISO Scenario

Project Feature	Total Acres[1]	Textural Family[2]							Slope Range[3]		Drainage Class[4]						Topsoil Thickness[5]		
		Fine	Fine-Loamy	Fine-Silty	Loamy	Coarse-Loamy	Fine-Loamy over Sandy or Sandy-Skeletal	Sandy	Slope 0-5%	Slope >5-16%	Excessively Drained	Well Drained	Moderately Well Drained	Somewhat Excessively Drained	Poorly Drained	Very Poorly Drained	0-12"	12-18"	>18"
	Acres																		
Fenced Area[6]	1,606.4	101.3	1,467.2	4.1	0.0	0.0	2.5	31.2	1,394.6	211.7	1.7	1,084.5	154.3	26.1	247.8	91.9	388.8	903.0	314.6
Access Road[7]	25.2	1.5	23.0	0.1	0.0	0.0	0.0	0.6	21.7	3.5	0.0	18.7	1.2	0.4	3.4	1.4	5.9	15.4	4.0
Inverter	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.1	0.0	0.5	0.0	0.0	0.1	0.0	0.1	0.4	0.1
Substation	5.1	0.0	5.1	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0	5.1	0.0
Switchyard	5.1	0.0	5.1	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	5.0	0.1	0.0	0.0	0.0	0.1	5.0	0.0
O&M[8]	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2.2	0.8	0.0	2.9	0.1	0.0	0.0	0.0	0.8	2.2	0.0
Basin	18.0	1.5	16.4	0.0	0.0	0.0	0.2	0.0	17.1	0.9	0.0	7.3	1.0	0.2	8.4	1.1	2.3	7.3	8.4
Laydown Yard	50.5	0.4	50.0	0.0	0.0	0.0	0.0	0.1	44.6	5.9	0.0	43.2	3.2	0.1	3.6	0.4	6.1	40.5	3.9
Laydown - Outside Project Area	9.4	0.0	9.4	0.0	0.0	0.0	0.0	0.0	9.4	0.0	0.0	7.6	0.5	0.0	1.4	0.0	0.5	7.6	1.4
Project Footprint[9]	***1,723.3***	***104.7***	***1,579.8***	***4.2***	***0.0***	***0.0***	***2.6***	***31.9***	***1,500.4***	***222.9***	***1.7***	***1,174.8***	***160.4***	***26.7***	***264.7***	***94.9***	***404.6***	***986.4***	***332.3***
Undeveloped Area[10]	575.9	99.9	437.0	0.8	0.0	0.0	2.6	35.3	498.9	77.0	11.6	297.2	39.5	23.7	105.1	98.6	148.2	231.3	196.4
TOTAL	***2,299.2***	***204.6***	***2,016.8***	***5.0***	***0.0***	***0.0***	***5.2***	***67.3***	***1,999.2***	***299.9***	***13.3***	***1,472.0***	***199.9***	***50.4***	***369.8***	***193.5***	***552.9***	***1,217.6***	***528.7***

1 Total acres of Project features that are anticipated to be disturbed. Data was obtained by merging Project facility polygons with the SSURGO spatial data in ArcGIS. Summations were performed in ArcGIS Pro or Microsoft Xcel.
2 Data available directly from the Natural Resources Conservation Service (NRCS) SSURGO spatial or attribute database via geospatial query of the spatial or attribute data.
3 Representative slope values are taken directly from the SSURGO database. The SSURGO database provides representative slope values for all component soil series. Slope classes represent the slope class grouping in percent that contains the representative slope value for a major component soil series. For example, a soil mapped in the 2-6% slope class has an average slope of 4% which is within the 0-5% slope range.
4 Drainage class as taken directly from the SSURGO database.
5 Topsoil thickness is the aggregate thickness of the A horizon described in the SSURGO database. See section 4.2 for notes on soil segregation.
6 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don't have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).
7 Access roads will be up to 20 feet wide.
8 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.
9 The Project Footprint includes all of the fenced-in areas within the Project Area, including the two laydown areas outside the fence.
10 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

Table 2: Acreage of Soils with Selected Physical Characteristics – Garvin Scenario

		Textural Family[2]							Slope Range[3]		Drainage Class[4]						Topsoil Thickness[5]		
Project Feature	**Total Acres[1]**	**Fine**	**Fine-Loamy**	**Fine-Silty**	**Loamy**	**Coarse-Loamy**	**Fine-Loamy over Sandy or Sandy-Skeletal**	**Sandy**	**Slope 0-5%**	**Slope >5-16%**	**Excessively Drained**	**Well Drained**	**Moderately Well Drained**	**Somewhat Excessively Drained**	**Poorly Drained**	**Very Poorly Drained**	**0-12”**	**12-18”**	**>18”**
	Acres																		
Fenced Area[6]	1,611.0	98.8	1,474.4	4.1	0.0	0.0	2.5	31.2	1,401.28	209.69	1.68	1,091.55	154.40	26.14	247.85	89.36	386.87	912.09	312.01
Access Road[7]	25.6	1.5	23.4	0.1	0.0	0.0	0.0	0.6	21.96	3.63	0.01	19.12	1.24	0.38	3.44	1.42	6.01	15.63	3.95
Inverter	0.6	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.55	0.07	0.00	0.46	0.03	0.01	0.06	0.05	0.13	0.40	0.09
Substation	5.1	2.6	2.5	0.0	0.0	0.0	0.0	0.0	3.85	1.22	0.00	2.50	0.00	0.00	0.00	2.57	1.22	1.28	2.57
Switchyard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O&M[8]	3.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	1.53	1.43	0.00	2.96	0.00	0.00	0.00	0.00	1.43	1.53	0.00
Basin	18.0	1.5	16.4	0.0	0.0	0.0	0.2	0.0	17.11	0.94	0.00	7.35	1.04	0.16	8.41	1.10	2.34	7.30	8.40
Laydown Yard	50.5	0.4	50.0	0.0	0.0	0.0	0.0	0.1	44.59	5.93	0.00	43.24	3.20	0.05	3.63	0.40	6.10	40.53	3.89
Laydown - Outside Project Area	9.4	0.0	9.4	0.0	0.0	0.0	0.0	0.0	9.41	0.00	0.00	7.55	0.50	0.00	1.35	0.00	0.50	7.55	1.35
Project Footprint[9]	***1,723.2***	***104.7***	***1,579.7***	***4.2***	***0.0***	***0.0***	***2.6***	***31.9***	***1,500.3***	***222.9***	***1.7***	***1,174.7***	***160.4***	***26.7***	***264.7***	***94.9***	***404.6***	***986.3***	***332.3***
Undeveloped Area[10]	576.0	99.9	437.1	0.8	0.0	0.0	2.6	35.3	498.94	77.03	11.61	297.28	39.51	23.66	105.06	98.58	148.25	231.29	196.43
TOTAL	***2,299.2***	***204.6***	***2,016.8***	***5.0***	***0.0***	***0.0***	***5.2***	***67.3***	***1,999.2***	***299.9***	***13.3***	***1,472.0***	***199.9***	***50.4***	***369.8***	***193.5***	***552.9***	***1,217.6***	***528.7***

1 Total acres of Project features that are anticipated to be disturbed. Data was obtained by merging Project facility polygons with the SSURGO spatial data in ArcGIS. Summations were performed in ArcGIS Pro or Microsoft Xcel.
2 Data available directly from the Natural Resources Conservation Service (NRCS) SSURGO spatial or attribute database via geospatial query of the spatial or attribute data.
3 Representative slope values are taken directly from the SSURGO database. The SSURGO database provides representative slope values for all component soil series. Slope classes represent the slope class grouping in percent that contains the representative slope value for a major component soil series. For example, a soil mapped in the 2-6% slope class has an average slope of 4% which is within the 0-5% slope range.
4 Drainage class as taken directly from the SSURGO database.
5 Topsoil thickness is the aggregate thickness of the A horizon described in the SSURGO database. See section 4.2 for notes on soil segregation.
6 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don’t have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).
7 Access roads will be up to 20 feet wide.
8 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.
9 The Project Footprint includes all of the fenced-in areas within the Project Area, including the two laydown areas outside the fence...
10 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

The soil drainage class in **Table 1** and **Table 2** above indicates the wetness in the soil profile along with the speed at which internal water moves through the soil. Soil drainage affects constructability, erosion by wind and water, and revegetation success. Almost all of the soils within the Project Footprint are in the Well, Moderately Well, Poor, and Very Poor drainage classes (1,175, 160, 265, and 95 acres, respectively, cumulatively 98 percent of the Project Footprint acreage), with smaller areas mapped into Excessively Drained and Somewhat Excessively Drained drainage classes. Soils in Poor and Very Poor drainage classes are highly productive when drained and are frequently converted to agriculture by the installation of subsurface drain tile. Soils that are excessively or somewhat excessively drained are typically porous and course which are not very productive for agriculture.

Topsoil thickness affects soil plant nutrition and surface soil structure. To maintain soil productivity, soils with thick topsoil will require larger areas for storage of larger volume of topsoil stripped from permanent infrastructure footprints. The majority of the soils within the Project Footprint are generally fine and are characterized by the presence of relatively thick topsoil greater than 12 inches in depth (76.5 percent). About one-quarter of the soils in the Project Footprint have 0-12 inches of topsoil.

3.2.2 Selected Classification Data: Prime Farmland, Land Capability Classification, Hydric Soils

Selected classification information for site soils is broken down by acreage within the 1,723-acre Project Footprint and the 576-acre area outside the Project Footprint in **Table 3** and **Table 4**.

Natural Resources Conservation Service (NRCS)-designated prime farmland soils have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and are also available for these uses[3] (USDA NRCS, 2000). Almost all of the soils in the Project Footprint are classified as prime farmland (64%; 1,110 acres), prime farmland if drained (21%; 359 acres), or soils of statewide importance (12%; 205 acres) for a total of 97 percent (Exhibit 7).

Per Minnesota Rule 7850.4400, subpart 4, "no large electric power generating plant site may be permitted where the developed portion of the plant site… includes more than 0.5 acres of prime farmland per megawatt of net generating capacity." Minnesota's DOC issued guidance which provides information on how to assess projects which exceed the 0.5-acre prime farmland/MW threshold under the rule and determine if an exception applies.[4] This includes describing why alternatives were not chosen, how avoidance of certain impacts influenced site selection, and showing a good faith consideration was given to nearby non-prime farmland areas. As part of the

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[3] According to the USDA's NRCS, *prime farmland* has the combination of soil properties, growing season, and moisture supply needed to produce sustained high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods. In general, prime farmland has an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium, and few or no rocks. Its soils are permeable to water and air. Prime farmland is not excessively eroded or saturated with water for long periods of time, and it either does not flood frequently during the growing season or is protected from flooding.

[4] *Solar Energy Production and Prime Farmland – Guidance for Evaluating Prudent and Feasible Alternatives* - (Minnesota EERA, May 19, 2020). See also https://mn.gov/eera/web/doc/1esjij3929/.

SPA prepared for the Project, a detailed assessment of prime farmland impacts was included which indicated no other feasible and prudent site was identified in place of the proposed Project at the Project Area in Custer Township, Lyon County, MN.

With the exception of a few areas, Lyon County has a high percentage of soil that is classified as prime farmland or prime farmland if drained. Siting the Project focused on a location that contains a relatively large area where other disturbances were minimized, and efficiency and ease of access could be maximized. Lyon County overall contains approximately 83% prime farmland and approximately 84.2% of the Project Area includes prime farmland. As mentioned in Section 3.1.2 of the SPA, other alternative sites could not be identified in close proximity to the existing interconnection scenarios to avoid prime farmland, make efficient use of existing equipment, minimize line loss and avoid the need for large transmission construction that had a higher potential to negatively impact the environment.[5] Additionally, as further detailed in the Project VMP, Coneflower Solar will utilize an adaptive management approach for vegetation management in order to provide the best care and protection for the prime farmland from year to year. Coneflower Solar is committed to ensuring the vitality of the soils during construction, operation, and eventual decommissioning of the Project.

5 *Solar Energy Production and Prime Farmland – Guidance for Evaluating Prudent and Feasible Alternatives* - (Minnesota EERA, May 19, 2020). See also https://mn.gov/eera/web/doc/1esjij3929/.

Table 3: Acreage of Soils with Selected Classification Data – MISO Scenario

		Prime Farmland				Land Capability Class (LCC)											
Project Feature	**Total Acres**	**All Soils**	**Statewide Importance**	**If Drained**	**Not Prime**	**1**	**2e**	**2s**	**2w**	**3e**	**3s**	**3w**	**4e**	**4s**	**6s**	**8w**	**Hydric Soils[1]**
Fenced Area[2]	1,606.4	1,025.33	195.68	339.47	0.00	138.75	868.57	15.93	247.85	0.09	5.38	91.63	220.74	2.08	1.68	0.31	339.78
Access Road[3]	25.2	16.30	3.45	4.85	0.00	1.18	15.06	0.06	3.44	0.00	0.18	1.42	3.72	0.00	0.01	0.00	4.85
Inverter	0.6	0.42	0.08	0.11	0.00	0.03	0.39	0.00	0.06	0.00	0.01	0.05	0.08	0.00	0.00	0.00	0.11
Substation	5.1	5.07	0.00	0.00	0.00	0.01	5.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Switchyard	5.1	5.07	0.00	0.00	0.00	0.08	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O&M[4]	3.0	2.21	0.76	0.00	0.00	0.05	2.16	0.00	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00
Basin	18.0	7.58	0.64	9.51	0.00	1.03	6.38	0.01	8.41	0.02	0.00	1.10	0.78	0.16	0.00	0.00	9.51
Laydown Yard	50.5	40.47	4.66	4.02	0.00	1.43	37.26	1.77	3.63	0.00	0.05	0.40	5.98	0.00	0.00	0.00	4.02
Laydown - Outside Project Area	9.4	8.05	0.00	1.35	0.00	0.50	7.55	0.00	1.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35
Project Footprint[5]	***1,723.3***	***1,110.5***	***205.3***	***359.3***	***0.0***	***143.1***	***947.4***	***17.8***	***264.7***	***0.1***	***5.6***	***94.6***	***232.1***	***2.2***	***1.7***	***0.3***	***359.6***
Undeveloped Area[6]	575.9	271.52	59.11	195.49	0.00	38.36	230.40	2.32	105.06	0.38	0.13	90.44	82.40	0.44	11.61	7.38	203.63
TOTAL	***2,299.2***	***1,382.0***	***264.4***	***554.8***	***0.0***	***181.4***	***1,177.8***	***20.1***	***369.8***	***0.5***	***5.7***	***185.0***	***314.5***	***2.7***	***13.3***	***7.7***	***563.3***

1 Hydric Soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.
2 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don't have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).
3 Access roads will be up to 20 feet wide.
4 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.
5 The Project Footprint includes the area within the perimeter fence that is hosting solar equipment. The Project Footprint, based on the Project's preliminary design, includes access roads, buried electrical collection lines, inverter skids, an O&M Building, Project Substation, stormwater basins, and temporary laydown yards.
6 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

Table 4: Acreage of Soils with Selected Classification Data – Garvin Scenario

		Prime Farmland				Land Capability Class (LCC)											
Project Feature	**Total Acres**	**All Soils**	**Statewide Importance**	**If Drained**	**Not Prime**	**1**	**2e**	**2s**	**2w**	**3e**	**3s**	**3w**	**4e**	**4s**	**6s**	**8w**	**Hydric Soils[1]**
Fenced Area[2]	1,611.0	1,034.5	193.7	336.9	45.9	138.9	877.7	15.9	247.8	0.1	5.4	89.1	218.7	2.1	1.7	0.3	337.2
Access Road[3]	25.6	16.6	3.6	4.9	0.6	1.2	15.3	0.1	3.4	0.0	0.2	1.4	3.9	0.0	0.0	0.0	4.9
Inverter	0.6	0.4	0.1	0.1	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Substation	5.1	1.3	1.2	2.6	0.0	0.0	1.3	0.0	0.0	0.0	0.0	2.6	1.2	0.0	0.0	0.0	2.6
Switchyard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
O&M[4]	3.0	1.5	1.4	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0
Basin	18.0	7.6	0.6	9.5	0.3	1.0	6.4	0.0	8.4	0.0	0.0	1.1	0.8	0.2	0.0	0.0	9.5
Laydown Yard	50.5	40.5	4.7	4.0	1.4	1.4	37.3	1.8	3.6	0.0	0.0	0.4	6.0	0.0	0.0	0.0	4.0
Laydown - Outside Project Area	9.4	8.1	0.0	1.4	0.0	0.5	7.6	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
Project Footprint[5]	***1,723.2***	***1,110.4***	***205.3***	***359.3***	***48.2***	***143.0***	***947.4***	***17.8***	***264.7***	***0.1***	***5.6***	***94.6***	***232.1***	***2.2***	***1.7***	***0.3***	***359.6***
Undeveloped Area[6]	576.0	271.6	59.1	195.5	49.8	38.4	230.4	2.3	105.1	0.4	0.1	90.4	82.4	0.4	11.6	7.4	203.6
TOTAL	***2,299.2***	***1,382.0***	***264.4***	***554.8***	***98.0***	***181.4***	***1,177.8***	***20.1***	***369.8***	***0.5***	***5.7***	***185.0***	***314.5***	***2.7***	***13.3***	***7.7***	***563.3***

1 Hydric Soils are soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

2 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don't have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).

3 Access roads will be up to 20 feet wide

4 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.

5 The Project Footprint includes the area within the perimeter fence that is hosting solar equipment. The Project Footprint, based on the Project's preliminary design, includes access roads, buried electrical collection lines, inverter skids, an O&M Building, Project Substation, stormwater basins, and temporary laydown yards.

6 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

Land Capability Class (LCC) is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. Soils within the Project Footprint are classified as LCC 1, 2e, 2s, 2w, 3e, 3s, 3w, 4e, 4s, 6s, and 8w. A numerical value of 1 and 2 indicates soils with no or few limitations that restrict the choice of plants or require very careful management. Soils in the other classes are more restrictive in what plants or crops can be cultivated in them. Soils in LCC Class 1 are typically considered prime farmland and soils in LCC Classes 2e and 2W are considered prime farmland if drained. Soils in Class 3W can be prime farmland as they are generally poorly drained soils but can be effectively tile drained. Most of the soils in the Project Footprint (1,355 acres) are in LCC 1, 2e, and 2w.

Hydric soils are generally described as soils in poorly drained to very poorly drained drainage classes. Hydric soils are formally a component of regulated wetlands and can be used to indicate areas with potential wetlands. Most of the soils in the Project Footprint are non-hydric (1,319 acres, 76.5 percent), with 360 acres (23.5 percent) being considered hydric soils. While some of the site is mapped with hydric soils, historical aerial photography indicates that these areas are successfully cropped year after year indicating the presence of subsurface drainage.

Coneflower Solar will evaluate drain tile locations and take this into account as final design/engineering is completed for the Project.

3.2.3 Construction-Related Interpretations: Highly Erodible Land (Wind and Water), Compaction Prone, Rutting Prone, and Drought Susceptible with Poor Revegetation Potential

Selected construction-related interpretative data for site soils are broken down by acreage within the 1,723-acre Project Footprint and the 576-acre undisturbed area in Table 5 and Table 6. Highly erodible land is identified as being susceptible to water and wind erosion. The majority of soils in the Project Footprint are low relief, medium-textured soils with intermediate water infiltration characteristics that limit soil erosion by the agent of water. A small portion (14.5%) of the Project Footprint soils is highly water erodible.

Wind erosion was evaluated using the wind erodibility group. Highly wind erodible soils are medium textured, relatively well drained soils with poor soil aggregation, resulting in soils with soil surfaces dominated by particles that can be dislodged and carried by the wind. Highly wind erodible soils were not identified within the Project Footprint. Coneflower Solar will develop plans to mitigate the potential loss of soil in the SWPPP and through BMPs throughout Section 4.0.

Soils prone to compaction and rutting are subject to changes in soil porosity and structure as a result of mechanical deformation caused loading by equipment during construction. Compaction and rutting are related to moisture content and texture and are worse when medium- and fine-textured soils are subject to heavy equipment traffic when wet. Approximately 748 acres of the Project Footprint is considered to have a medium compaction rating. Soils with a medium soil compaction rating have significant potential for compaction. After the initial compaction (i.e. the first equipment pass), medium rated soils are able to support standard equipment with only minimal increases in soil density. The rest of the soils in the Project Footprint (975 acres) have a low compaction rating, which are soils that are able to support equipment with minimal compaction. All of the soils (1,723 acres, 100 percent) are anticipated to rut if they are trafficked when wet. Coneflower Solar will develop operational guidelines to mitigate heavy trafficking soils when wet to minimize potential compaction and rutting in the SWPPP.

Soils susceptible to drought include coarse textured soils in moderately well to excessive drainage classes. Revegetation during seed germination and early seedling growth is severely compromised during dry periods on droughty soils. As indicated in **Table 5** and **Table 6** approximately 1,358 acres of the Project Footprint are rated either with a moderate or a drought vulnerable drought susceptibility rating. The remaining soils (365 acres) within the Project Footprint are rated with a slight or somewhat drought susceptibility rating.

Table 5: Acreage of Soils in Selected Construction-Related Interpretations – MISO Scenario

		High Erodible[1]		Compact Prone[2]		Rutting Hazard[3]		Drought Susceptible[4]					
Project Feature	Total Acres	Water	Wind	Low	Medium	Moderate	Severe	Somewhat	Slight	Moderate	Drought Vulnerable	Not Rated
Fenced Area[5]	1,606.4	238.2	0.0	910.8	695.5	31.2	1,575.1	5.2	339.8	1,235.6	25.7	0.0
Access Road[6]	25.2	3.9	0.0	13.3	11.9	0.6	24.6	0.1	4.9	19.9	0.4	0.0
Inverter	0.6	0.1	0.0	0.3	0.3	0.0	0.6	0.0	0.1	0.5	0.0	0.0
Substation	5.1	0.0	0.0	2.2	2.9	0.0	5.1	0.0	0.0	5.1	0.0	0.0
Switchyard	5.1	0.0	0.0	3.4	1.7	0.0	5.1	0.0	0.0	5.1	0.0	0.0
O&M [7]	3.0	0.8	0.0	0.1	2.9	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Basin	18.0	1.1	0.0	13.6	4.4	0.0	18.0	0.0	9.5	8.5	0.0	0.0
Laydown Yard	50.5	6.0	0.0	27.1	23.4	0.1	50.4	0.0	4.0	46.4	0.1	0.0
Laydown - Outside Project Area	9.4	0.0	0.0	4.6	4.8	0.0	9.4	0.0	1.4	8.1	0.0	0.0
Unused Preliminary Development	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	***1,723.3***	***249.9***	***0.0***	***975.4***	***747.9***	***31.9***	***1,691.4***	***5.3***	***359.6***	***1,332.2***	***26.2***	***0.0***
Undeveloped Area[8]	575.9	108.5	0.0	379.2	196.7	35.3	540.3	0.0	203.6	337.2	34.8	0.3
TOTAL	***2,299.2***	***358.5***	***0.0***	***1,354.6***	***944.5***	***67.3***	***2,231.6***	***5.3***	***563.3***	***1,669.3***	***61.0***	***0.3***

1 Highly Erodible Water includes soils in Land Capability Cass 4e through 8e or that have a representative slope value greater than or equal to 9%. High Erodible Wind includes soils in wind erodibility groups 1 and 2.

2 NRCS Web Soil Survey indicates a Low rating as the potential for compaction being insignificant. The soil is able to support standard equipment with minimal compaction. A Medium rating is defined as having significant potential for compaction. After the initial compaction (i.e. the first equipment pass), this soil is able to support standard equipment with only minimal increases in soil density.

3 Rutting potential hazard based on the soil strength as indicated by engineering texture classification, drainage class, and slope. In general, soils on low slopes in wetter drainage classes and compromised of sediments with low strength will have potential rutting hazards.

4 Slight drought vulnerable soils are either in low lying parts of the landscape where plant roots may exploit near-surface ground water or are in areas where precipitation is much higher than potential evapotranspiration and may be water stressed in an extremely dry year. Somewhat drought vulnerable soils have greater than 25 cm of water storage and annual precipitation is generally adequate for plant growth, and some water stress may occur in dry years. Moderately drought vulnerable soils are such that in an average year, some water stress may occur, but in a good year, plant available water is generally adequate. Water storage is in the range of 15 to 25 cm. Drought vulnerable soils are such that drought conditions generally occur every year. The soil may have low water storage capacity (5 to 15 cm) and the site may have low annual precipitation or high annual temperature or both.

5 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don't have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).

6 Access roads will be up to 20 feet wide.

7 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.

8 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

Table 6: Acreage of Soils in Selected Construction-Related Interpretations – Garvin Scenario

		High Erodible[1]		Compact Prone[2]		Rutting Hazard[3]		Drought Susceptible[4]				
Project Feature	**Total Acres**	**Water**	**Wind**	**Low**	**Medium**	**Moderate**	**Severe**	**Somewhat**	**Slight**	**Moderate**	**Drought Vulnerable**	**Not Rated**
Fenced Area[5]	1,611.0	236.1	0.0	913.5	697.5	31.2	1,579.8	5.2	337.2	1,242.8	25.7	0.0
Access Road[6]	25.6	4.0	0.0	13.3	12.3	0.6	25.0	0.1	4.9	20.3	0.4	0.0
Inverter	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Substation	0.6	0.1	0.0	0.3	0.3	0.0	0.6	0.0	0.1	0.5	0.0	0.0
Switchyard	5.1	1.2	0.0	2.9	2.1	0.0	5.1	0.0	2.6	2.5	0.0	0.0
O&M [7]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Basin	3.0	1.4	0.0	0.0	3.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0
Laydown Yard	18.0	1.1	0.0	13.6	4.4	0.0	18.0	0.0	9.5	8.5	0.0	0.0
Laydown - Outside Project Area	50.5	6.0	0.0	27.1	23.4	0.1	50.4	0.0	4.0	46.4	0.1	0.0
Unused Preliminary Development	9.4	0.0	0.0	4.6	4.8	0.0	9.4	0.0	1.4	8.1	0.0	0.0
Subtotal	***1,723.2***	***249.9***	***0.0***	***975.3***	***747.8***	***31.9***	***1,691.3***	***5.3***	***359.6***	***1,332.1***	***26.2***	***0.0***
Undeveloped Area[8]	576.0	108.5	0.0	379.3	196.7	35.3	540.3	0.0	203.6	337.2	34.8	0.3
TOTAL	***2,299.2***	***358.5***	***0.0***	***1,354.6***	***944.5***	***67.3***	***2,231.6***	***5.3***	***563.3***	***1,669.3***	***61.0***	***0.3***

1 Highly Erodible Water includes soils in Land Capability Cass 4e through 8e or that have a representative slope value greater than or equal to 9%. High Erodible Wind includes soils in wind erodibility groups 1 and 2.

2 NRCS Web Soil Survey indicates a Low rating as the potential for compaction being insignificant. The soil is able to support standard equipment with minimal compaction. A Medium rating is defined as having significant potential for compaction. After the initial compaction (i.e. the first equipment pass), this soil is able to support standard equipment with only minimal increases in soil density.

3 Rutting potential hazard based on the soil strength as indicated by engineering texture classification, drainage class, and slope. In general, soils on low slopes in wetter drainage classes and compromised of sediments with low strength will have potential rutting hazards.

4 Slight drought vulnerable soils are either in low lying parts of the landscape where plant roots may exploit near-surface ground water or are in areas where precipitation is much higher than potential evapotranspiration and may be water stressed in an extremely dry year. Somewhat drought vulnerable soils have greater than 25 cm of water storage and annual precipitation is generally adequate for plant growth, and some water stress may occur in dry years. Moderately drought vulnerable soils are such that in an average year, some water stress may occur, but in a good year, plant available water is generally adequate. Water storage is in the range of 15 to 25 cm. Drought vulnerable soils are such that drought conditions generally occur every year. The soil may have low water storage capacity (5 to 15 cm) and the site may have low annual precipitation or high annual temperature or both.

5 The Fenced Area represents the land hosting the solar modules and the areas in between the solar modules that don't have a footprint for another facility within the fence (i.e., access road, inverter, basin, laydown area).

6 Access roads will be up to 20 feet wide.

7 The O&M Building includes the building, parking area, and other associated facilities that may be required such as a domestic drinking water well, aboveground water storage tanks, septic system, security gate, lighting, and signage.

8 The Undeveloped Area includes all areas outside the fenced areas and associated Project facilities but within the overall 2,299-acre Project Area and consists of vegetative areas, wetlands, waterways, buffers, and up to 12.7 acres of underground collection lines.

3.2.4 Summary of Major Soil Limitations at the Coneflower Solar Project

3.2.4.1 Prime Farmland

Soils within the Project Area are nearly level, generally deep, moderately drained, fine-loamy textured soils. Most of the soils (approximately 97%) within the Project Area are prime farmland (**Exhibit 7**). The primary limitations for the soils during Project construction, operations and maintenance, and eventual decommissioning include compaction and rutting that may occur when the soils are trafficked when wet, and the need to reserve and store large volumes of topsoil.

While certain soils classified as prime farmland will be impacted by the proposed solar facility, Coneflower Solar will implement BMPs during construction detailed in Section 4.0 including soil segregation and decompaction, wet weather conditions, erosion and sediment control, as well as implement the VMP and SWPPP for the Project. After construction, and for the life of the Project, soils will be stabilized and given an opportunity to rest, as the site is revegetated with a permanent cover of perennial grasses, sedges, and forbs according to seeding and management specifications agreed to by Coneflower Solar to the benefit of wildlife and the soil. Upon decommissioning, the land could be returned to its pre-construction agricultural use or to another use if economic conditions at that time indicate another use is an appropriate use for the site as determined by the landowner. Coneflower Solar anticipates that the property will be restored to agricultural use upon decommissioning of the Project.

The cover crop is used to support soil health by preventing erosion, improving the soil's physical and biological properties, supplying nutrients, suppressing weeds, improving the availability of soil water, and breaking pest cycles.

Initial post-construction revegetation efforts, establishment activities, and maintenance of vegetation during operations will consider selecting suitable plants, managing seeding times for late spring-early summer when soil moisture is optimum for germination, use of mulch and other BMPs. Existing tile drainage systems will be maintained during Project construction and operation. If any damage occurs within the existing drain tile system, it will be resolved by Coneflower Solar.

3.2.4.2 Topsoil Storage

Topsoil thickness across the Project Area currently ranges from 0 to greater than 18 inches (**Table 1** and **Table 2**) and the soil is relatively high in organic matter and fertile (**Table 3** and **Table 4**). Storing topsoil in large deep stockpiles is not recommended as deep piles of topsoil may not have the same biotic interaction of existing topsoil. It is recommended to have larger areas of shallower topsoil stockpiles to prevent compaction and retain original soil characteristics. To the extent practicable, topsoil should be conserved by preselecting areas to receive excess topsoil from nearby areas, grading and seed bed preparation as appropriate, and revegetation to maintain a rhizosphere suitable for plant growth.

3.2.4.3 Subsoil Storage

Storing subsoil will occur in the same process as described in Section 2.3 above. While some subsoil will be used to fill on-site low spots, any additional soil will be stored in shallow stockpiles to prevent compaction and retain its original soil characteristics. This soil will be stored for refilling drainage basins during decommissioning.

3.2.4.4 Compaction and Rutting

Compaction and rutting are potential limitations to constructing the Project in the Project Footprint. Coneflower Solar will design construction access and manage construction traffic to minimize the number of trips occurring on a given soil and location and will implement wet weather procedures when rutting is observed. Deep compaction is not anticipated to be a significant problem as the number of construction equipment passes over a given area is expected to be limited and construction equipment consists of smaller, low-ground-pressure tracked vehicles. If compaction becomes an issue, decompaction of the soil by tilling or ripping may be performed if safely distanced from existing buried utilities or other infrastructure.

Grading within the Project Footprint is expected to be minimal. This further prevents the amount of compaction and/or rutting that could take place as heavy vehicles will not be needed for as much time as a project that needs more grading. Of areas anticipated to be graded, the majority is needed for stormwater management ponds which aid in minimizing water runoff and pollution.

4.0 BMPs During Construction and Operation

The Project will be constructed and operated on property leased by Coneflower Solar. Typical Project phasing is listed below. As stated above, the Project is currently located mainly on farmland occupying a flat to gently rolling loess covered till plain in southern Minnesota (**Exhibits 1-3**).

Because all Project-related construction activities will be limited to the leased land, no direct impacts to adjacent land are expected. Additionally, technology to be deployed at the proposed facility does not require a completely flat or a uniform grade across the Project site. Because most of the Project site is currently nearly level or has slightly rolling terrain (**Table 1** and **Table 2**), the amount of grading anticipated within the Project Footprint is expected to be very minimal. The PV arrays will be designed to follow the existing grade of the Project Area within certain tolerances, which allows the designer of the facility to minimize the number of earthmoving activities that are required (see **Exhibit 3**).

While some grading activities may be required to raise or lower certain areas within the Project Area, the majority of the Project Area's topography would be left unchanged. The remainder of earthmoving activities would consist of work on the access roads, trenches for the AC collection system, and foundations for the Project Substation and inverter skids, as necessary. The sections below describe the measures that the Contractor will implement to minimize the physical impacts to the integrity of the topsoil and topography of the Project site.

Project Construction Phasing:

- Identification of clearing and grading limits, sensitive areas, and wetlands prior to construction;
- Installation of sediment and erosion controls as identified by project plans/approvals, including any necessary site-specific modifications as identified;
- Performance of earthwork, drain tile adjustment, access road work, and initial stabilization of exposed soils;
- Construction/installation of permanent stormwater treatment facilities;
- Installation of the substation, O&M Building, solar array and electrical components (concurrent with above);
- Application of seed and temporary stabilization; and
- Cleanup and permanent stabilization of the site.

4.1 Environmental Monitor

Coneflower Solar will contract with a third-party environmental monitor (Monitor) to periodically observe earthmoving activities during Project construction to ensure appropriate measures are taken to properly segregate and handle the topsoil. Coneflower Solar will coordinate with the MDA to identify a suitable Monitor.

The Monitor will have a variety of duties, including but not limited to:

- Perform weekly inspections during Project construction in which they have the freedom to pick a day of the week at random to inspect trenching and perform the following duties:
  - Observe construction crews and activities to ensure that topsoil is being segregated and managed appropriately;
  - Monitor the site for areas of potential soil compaction (except within access roads) for areas returning to agriculture after construction and make specific recommendations for decompaction;
  - Make recommendations related to applicable earthwork activities to Coneflower Energy's Construction Manager; and
  - Assist in determining if weather events have created "wet weather" conditions and provide recommendations to the Construction Manager on the ability to proceed with construction.
- Prepare a report of Coneflower Energy's adherence to soil BMPs and submit the report to the MDA on a regular basis during Project construction and upon completion of the Project.
- As applicable, attend construction and safety meetings upon accessing the construction site.

The Monitor will report potential and actual issues with BMPs to Coneflower Energy, its Construction Manager, and the MDA. If an independent third-party monitor is required for other Project aspects controlled by the site permit issued by the Commission, the Monitor will also complete the other required monitoring and the scope of the Monitor's responsibilities will also be coordinated with the Minnesota DOC Energy Environmental Review Analysis (EERA) staff. The Construction Manager will use discretion to either correct the activity or stop work depending on the issue to be resolved.

4.2 Soil Segregation and Decompaction

During construction, one of the primary means to protect and preserve the topsoil at the Project site will be to separate the topsoil from the other subgrade/subsoil materials when earthmoving activities, excavation or trenching are taking place during grading, road construction, cable installation, foundation installation, etc. There may be limited situations where excavated subsoil will be stored on adjacent undisturbed topsoil as most subsoil will be untouched. In these situations, subsoil will be returned to the excavation with as little disturbance of the underlying topsoil as practicable. Laying down a thin straw mulch layer as a buffer between the subsoil and topsoil will be used as practicable to facilitate more effective separation of the subsoil and underlying topsoil during the excavation backfill process.

Based on SSURGO data, most of the topsoil has a thickness of 0-18 inches (81% of the Project Footprint). This will be confirmed with geotechnical soil tests prior to earthwork activities on the site. Coneflower Solar will identify the appropriate depth of topsoil that should be stripped and segregated from other subsoil materials during earthwork activities. This information will be provided with a recommendation on specific segregation methods/techniques to the Monitor for review and input.

As a preliminary recommendation Coneflower Solar suggests that the full depth of topsoil be stripped up to 12 inches in thickness in areas of construction grading. Topsoil greater than 12 inches from the soil surface would be treated similarly to the underlying subsoil. During the activities that require temporary excavations and backfilling (i.e., trenching activities) the subgrade material will be replaced into the excavations first and compacted as necessary, followed by replacement of topsoil to the approximate locations from which it was removed. Topsoil will then be graded to the approximate pre-construction contour. Coneflower Solar will strive to avoid compaction in other areas where it is not required by the design.

Following earthwork activities that require segregation of topsoil/subsoil, topsoil materials will be re-spread on top of the backfilled and disturbed areas to maintain the overall integrity and character of the pre-construction farmland. Any excess topsoil material would be re-spread on the Project Area site at pre-established locations. The location and amount of topsoil will be documented to facilitate re-spreading of topsoil as a part of Project decommissioning. This practice is described in more detail below for each of the earthmoving activities that are anticipated for this Project.

4.3 Wet Weather Conditions

During the construction of the Project, when periods of wet weather occur a temporary halt of construction activities may be called if significant adverse impacts to soil occur. The Construction Manager for Coneflower Solar will have responsibility for halting activities if weather conditions pose a risk to worker safety or if conditions are such that heavy equipment would cause significant soil compaction or rutting of the Project Area.

Following initial grading at the site, many activities could still proceed in wet weather conditions given the lack of heavy equipment required for those tasks. However, the Construction Manager for Coneflower Solar would be responsible for ensuring that topsoil erosion, rutting, compaction, or damage to drain tiles (as present) is avoided to the extent possible. If damage is done to the drain tiles, Coneflower Solar will repair them as soon as is practicable.

The Construction Manager will ensure that proper techniques and practices are used to loosen soil appropriately when encountered. Soil loosening with chisel plows prior to disking and planting will typically be a standard method of soil preparation in areas proposed for seeding. Agricultural equipment capable of operating within the approximate 20-foot-wide space between panel lines when panels are oriented vertically would be used to loosen soil, prepare a seedbed, and plant suited seed mixes.

4.4 Adaptive Management During Construction

As with all forms of adaptive management, during construction of the Project changes may be made to the Plan should unforeseeable conditions arise that render the Plan unworkable. Using this approach will allow the Project to continue despite potential barriers. Should weather or site conditions during construction require different BMPs than those that are described in this section, Coneflower Solar will work with the Monitor, MDA and other appropriate agencies to discuss and select potential new approaches to the specific conditions that are encountered.

Coneflower will remain flexible and implement new practices/procedures that will help ensure the quality of the Project land while maintaining the safety of the workers.

4.5 Initial Grading/Road Construction/Array Construction

The first phase of Project construction activities will involve general civil work in the Project Footprint where initial cut and fill activities will be performed by the Contractor. Coneflower Solar will identify the appropriate depth of topsoil up to 12 inches that should be stripped and segregated from other materials during initial grading activities. Based on soil information, topsoil in this region of Minnesota is generally 0-18 inches but may reach depths of up to 36 inches. This will be confirmed with tests prior to grading activities. If needed, Coneflower Solar will provide this information and a recommendation on specific segregation methods/techniques to the MDA for review and input.

The Contractor will first strip topsoil that sits higher than other areas. This will ensure that the topography falls within the tolerances allowed for by the solar array design. During this civil work, topsoil will be pushed outside of the cut/fill areas and collected into designated spots for later use. Once topsoil is removed from the cut/fill areas, the sub-grade materials will be removed as required from on-site hills and relocated to spots with the least potential for runoff and erosion. Prior to relocating subgrade materials to the low spots, topsoil in the low areas will be stripped and set aside before the fill is added, then re-spread over the new fill. Topsoil and subsoil will remain segregated in order to avoid mixing and maintain the integrity of both soil types. The subgrade materials would be compacted in place. When compaction is complete, the topsoil spoil piles will be re-spread over the reconditioned sub-grade areas.

This newly spread topsoil will be loosely compacted and/or "tracked" to give a smooth-surface and employ the wind and stormwater erosion prevention BMPs.

After most of the initial earthwork activities have been completed, the Contractor will start construction of the Project access road network. This work would start with the stripping of topsoil materials from the planned new roadbed areas to a depth of at least 12 inches. Topsoil will be windrowed to the edges of each roadbed. Windrowing will consist of pushing materials into rows of stockpiles adjacent to the road which will be loosely compacted and/or "tracked" with stormwater and wind erosion BMPs in place. The Contractor will then compact the sub-grade materials. After gravel is installed and compacted to engineers' requirements, the Contractor will shape Project drainage ditches as identified on the final grading plan. Previously stripped and windrowed topsoil will be re-spread throughout the Project Footprint.

Following grading and road construction, the Contractor will begin the installation of racking piles for the solar PV array racking system. This work will consist of directly driving the pile into the soil with pile driving equipment. The installation vehicles would operate on the existing surface of the ground and impacts would be limited and similar to a vehicle driving over the soil surface. Very little soil disturbance is expected from this activity.

4.6 Foundations

The Contractor will perform foundation work for the Project Substation, O&M Building, and inverter skids. For all facilities listed, other than the inverter skids, the Contractor will strip topsoil off the area, grade the site (as needed), install the pier-type foundations, compact sub-grade materials, re-grade spoils around the area, and then install clean rock on the surface. Topsoil stripped from the Project Substation areas will be pushed outside of the substation area and collected into designated locations for later use. These topsoil piles will be windrowed or piled and loosely compacted and/or "tracked" with stormwater and wind erosion BMPs in place. Once substation construction is sufficiently complete, the topsoil piles would be distributed in a thin layer adjacent to the substation area and the topsoil revegetated with an appropriate seed mix.

Where inverters are installed, topsoil will be stripped and placed adjacent to the inverter. The inverter foundations will then be excavated using an excavator followed by installation of rebar and concrete. After the concrete cures and its testing strength is completed, the subgrade soils will be compacted around the inverters. After the inverters are set, the adjacent topsoil will be re-spread around the inverter.

Once decommissioned, the area will be restored to its pre-construction contours, the topsoil will be replaced, and the subsoil will be returned to its original excavation area as necessary.

4.7 Trenching

Construction of the Project will require trenching for the installation of the AC collection lines across the Project Area. The Contractor will be installing AC collection cables in trenches of approximately four feet deep using the “open trench” method. Topsoil and subgrade materials would be excavated from the trench using typical excavating equipment or backhoes and segregated as described above. The bottom of each trench may be lined with clean fill to surround the cables. Coneflower Solar anticipates that native subsoil will be rock free (**Table 1-a** and **Table 1-b**) but will confirm this with thermal studies. Depending on the results, foreign fill may be necessary. After cables have been installed on top of bedding materials in the trench, the trenches will be backfilled with subsoil followed by topsoil. This material would be compacted as necessary.

4.8 Temporary Erosion and Sediment Control

By adhering to the Project specific SWPPP required under the NPDES permitting requirement that is administered by the Minnesota Pollution Control Agency (MPCA), Coneflower Solar will minimize the risk of excessive soil erosion on lands disturbed by construction. Prior to construction, Coneflower Solar will work with engineers and the Contractor to outline the reasonable methods for erosion control BMPs and prepare the SWPPP.

These measures would primarily include silt fencing on the downside of all hills, near waterways, and near drain tile inlets. This silt fencing would control soil erosion via stormwater. Check dams and straw waddles will also be used to slow water during rain events in areas that have the potential for high volume flow. In addition, the Contractor can use erosion control blankets on any steep slopes, although given the site topography this BMP will not likely be required. Lastly, as outlined above, topsoil and sub-grade material will be piled and loosely compacted and/or “tracked” while stored. The BMPs employed to mitigate wind and stormwater erosion on these soil stockpiles will include installing silt fence on the downward side of the piles as needed and installation of straw waddles if these spoil piles are located near waterways.

The SWPPP will identify designated onsite SWPPP inspectors to be employed by the Contractor for routine inspections as well as for inspections after storm events per the plan outlined in the SWPPP.

4.9 Drain Tile Identification, Avoidance and Repair

Coneflower Solar will work with landowners and the County to identify drain tile within the Project Area and Project Footprint. Coneflower has 15 lease or easement agreements with landowners for the parcels in the Project Area. To date, Coneflower has received tile maps from four landowners (agreement holders) and an additional three landowners have confirmed there is no tile on their property. Coneflower is coordinating with the other eight landowners to confirm if they have drain tile, and, if so, to acquire their maps. Where County drain tiles and judicial ditches need to be crossed by Project facilities (e.g., collection lines), directional boring will be used to install the facilities which will avoid impacts to these tiles and ditches. To minimize unforeseen repairs or damages to existing drain tile lines and/or drain tile systems, Coneflower Solar is committed to preserve soil drainage conditions as it currently exists. Existing drain tile lines and surrounding drainage systems will be maintained, repaired, relocated, or replaced (if damaged during construction or operation of the Project) by Coneflower Solar as needed.

4.9.1 Pre-Construction Tile Mapping and Repair

Pre-construction farm field drain tile mapping challenges often exist on solar energy projects. Identifying and locating drain tiles is complicated because of missing, incomplete, and inaccurate mapping. As noted above, Coneflower Solar is actively working with landowners and the County to identify drain tile within the Project Area and Project Footprint. Coneflower Solar will attempt to avoid and/or relocate existing drainage systems as needed for construction of the Project.

Drain tile or drainage system adversely affected by Coneflower Solar will be identified, repaired, relocated, or replaced as needed to achieve the function and scope to its original size and capacity. Replacement or rerouting of tile will take place during construction or as it is identified in order to maintain the integrity of the drainage lines. This practice should minimize interruption of drainage on site or on neighboring farms that may drain through the Project leased property. New or modified drain tile systems installed by Coneflower Solar will be located using GPS equipment and archived in Project construction files and the Project Decommissioning Plan.

The following considerations will also apply:

- Tiles will be repaired with materials of the same or better quality as that which was damaged;
- Tile repairs will be conducted and located in a manner consistent with industry-accepted methods;
- Before completing permanent tile repairs, tiles will be examined within the work area to check for tile that might have been damaged by construction equipment. If tiles are found to be damaged, they will be repaired; and
- Coneflower Solar will make efforts to complete permanent tile repairs within a reasonable timeframe, considering weather and soil conditions.

4.9.2 Project Design Considerations

Coneflower Solar will attempt to design, engineer and construct around the tiles to ensure placement of solar racking systems does not damage existing tile to the extent feasible. Coneflower will take extra care to protect drain tile mains. In some areas, re-routing of the tile may be necessary and this re-routing work will take place immediately prior to or during construction.

4.9.3 Construction Measures

In areas where it will be impossible to design solar arrays around existing drain tile locations, steps will be taken to ensure the integrity of the drainage system will remain intact both during and after construction. Tile lines that are in direct conflict with solar array installation or trenches (i.e., collection lines) will be rerouted around the conflict area. Tile lines that have the potential to be damaged by construction traffic will be bridged or reinforced to maintain integrity.

4.9.4 Operational Measures

Following completion of construction, Coneflower Solar will inspect the Project site after significant snow melt or rainfall events for evidence that tile systems are functioning adequately. If localized wet areas or standing water are observed, it is likely the tile system is not operating as anticipated. In this situation, an agricultural drain tile contractor will be engaged to pin-point damaged tile that may have been missed during construction. Tile would be repaired following the process outlines above.

4.10 Construction Debris

Construction-related debris and unused material will be removed by Coneflower Solar and the Contractor. Below-grade, unusable materials will be removed and loaded immediately onto trucks for subsequent disposal at a designated off-site location. The Contractor will use locally sourced dumpsters and removal services to regularly check and schedule pick-ups for full dumpsters which will be switched out for empty ones. To the extent practicable, recyclable materials (i.e., cardboard) will be sorted and recycled at a local facility.

Debris/trash collection points and dumpsters will be located both in the laydown yards as well as at strategically designated locations close to where actual work is being performed. If loose debris fails to be deposited into dumpsters or if it becomes wind-blown, the Contractor will inspect and clear fence lines of debris on a daily basis to ensure that debris and trash does not leave the Project Area. Contaminated materials are not expected; however, if such materials are encountered during construction, specialized dumpsters and handling instructions will be employed to suit the types of contaminated materials discovered. Contaminated materials will be disposed of at the nearest appropriate facility in accordance with applicable laws, ordinances, regulations, and standards.

5.0 Decommissioning

Coneflower Solar has prepared a formal Decommissioning Plan as required for the Site Permit to be issued by the Commission for the Project. At the end of the Project's useful life, Coneflower Solar will either take necessary steps to continue operation of the Project (such as re-permitting and retrofitting) or will decommission the Project and remove facilities. Decommissioning activities will include:

- Removal of the solar arrays, inverters/transformers, electrical collection system, fencing, lighting, Project Substation, and possibly the O&M Building (the O&M Building may be useful for other purposes);
- Removal of below-ground electrical cables to a depth of four feet (cables buried below four feet will be left in place, or removed as required by applicable lease option agreement);
- Removal of buildings and ancillary equipment to a depth of four feet or as required by applicable lease option agreement;
- Removal of surface road material and restoration of the roads to substantially the same physical condition that existed immediately before construction. If the Project is decommissioned and the land sold to a new owner, Coneflower would retain any access roads the new landowner requested (in writing) be retained;
- Grading, adding or re-spreading topsoil, and reseeding according to the NRCS technical guide recommendations and other agency recommendations, areas disturbed by the construction of the facility or decommissioning activities, grading and soil disturbance activities will be kept to the minimum necessary to restore areas where topsoil was stripped in construction, topsoil in decommissioned roads and compaction only in areas that were compacted during decommissioning activities so that the benefits to the soil that were achieved over the life of the Project are not counteracted by decommissioning; and
- Standard decommissioning practices would be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the solar energy improvements, and restoration.

5.1 Timeline

Decommissioning is estimated to be completed within approximately 60 weeks, and the decommissioning crew will ensure that all equipment is recycled or disposed of properly.

5.2 Removal and Disposal of Project Components

The removal and disposal details of the Project site components are found below. Typical construction equipment to be used during decommissioning will include, but is not limited to, truck-mounted cranes, loaders, bulldozers, dump trucks, and decompaction equipment.

- **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 shipped 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 metal recycling facility. The posts can be removed using backhoes or similar equipment. 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 to promote plant growth.
- **Hanging and Underground Cables and Lines:** All underground cables and conduits will be removed to a depth of 48 inches. Facilities deeper than 48 inches may remain in place to limit vegetation and surface disturbance. The underground cables around equipment pads will be completely removed up to a length of 25’ around the perimeter of the inverter pads. Prior to any excavation, topsoil will be segregated and stockpiled for later use, and the subsurface soils will be staged next to the excavation. The subgrade will be compacted to a density similar to the surrounding soils to promote plant growth and maintain drainage. Topsoil will be redistributed across the disturbed area.
- **Inverters, Transformers, and Ancillary Equipment:** All electrical equipment will be disconnected and disassembled. All parts 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.
- **Equipment Foundation and Ancillary Foundations:** The ancillary foundation for the Project are pile foundations for both equipment skids and meteorological stations. As described for the solar array steel foundation posts, the foundation piles will be pulled out completely. Duct banks will be excavated to a depth of at least 48 inches. All duct banks, up to 50 feet, around the equipment pads will be removed. All unexcavated areas compacted by equipment used for decommissioning will be de-compacted in a manner to adequately restore the topsoil and sub-grade material to a density similar to the surrounding soils. 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-Project conditions to the extent feasible.
- **Access Roads:** Facility access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the applicable landowner.
    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 removed, aggregate will be excavated and loaded in dump trucks using front loaders, backhoes, or other suitable excavation equipment, 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. Another disposal option is to provide the aggregate to local landowners as clean fill. 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 using a chisel plow or other appropriate subsoiling equipment. All large rocks will be removed. Topsoil that was stockpiled during the original construction will be distributed across the road corridor.

- **Project Substation:** Decommissioning of the Project Substation will be performed with the rest of the Project. All steel, conductors, switches, transformers, and other components of the substation will be disassembled and taken off site to be recycled or reused. Foundations and underground components will be removed to a depth of four feet. The rock base will be removed using bulldozers and backhoes or front loaders. The material will be hauled from the site using dump trucks to be recycled or disposed of at an off-site facility. Additionally, any permanent stormwater treatment facilities (e.g., infiltration ponds and engineered drainage swales) will be removed. Topsoil will be reapplied to match surrounding grade to preserve existing drainage patterns. Topsoil and subsoil will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for reintroduction of farming.
- **O&M Building:** The O&M Building is a sturdy, general purpose steel building. If the building is not repurposed, decommissioning will include disconnection of the utilities and demolition of the building structure, foundation, rock base parking lot, and associated vegetated/stormwater handling facilities. All associated materials will be removed from the site using wheeled loaders or backhoes and bulldozers and hauled off site in dump trucks. All recyclable materials will be brought to appropriate facilities and sold; the remaining materials will be disposed of at an approved landfill facility. Subgrade soils will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for reintroduction of farming. Topsoil will be reapplied to match existing surrounding grade to preserve existing drainage patterns, and the site will be tilled to a farmable condition, depending upon location.

5.3 Restoration/Reclamation of Facility Site

After equipment is removed, the facility Project Area could be restored to an agricultural use (in accordance with this AIMP, Project site lease agreements, the VMP and applicable portions of the SWPPP) or to another use if the economic conditions at that time indicate another use is an appropriate use for the site. Holes created by fence poles, concrete pads, re-claimed access road corridors and other equipment, as well as trenches/drains excavated by the Project, will be filled in with soil to existing conditions and seeded.

Grading and other soil disturbance activities during decommissioning will be kept to the minimum necessary to effectively decommission the site to maintain the soil benefits realized during the long-term operation of the Project, such benefits include building topsoil through plant matter decay, carbon capture, and beneficial soil bacteria that are often absent from soil subject to row crop agriculture. This will include the revegetation in accordance with the details of the Project VMP. In accordance with the SWPPP, erosion and sediment control measures will be left in place, as needed, until the Project site is stabilized.

Coneflower Solar reserves the right to extend operations instead of decommissioning at the end of the Site Permit term, as provided in the lease agreements for the Project. In this case, a decision may be made on whether to continue operation with existing equipment or to retrofit the facilities with upgrades based on newer technologies. If the decision is made to continue operations, the Coneflower Solar would evaluate the Project and determine if any changes would require re-permitting of the facility. If a new Site Permit is required, Coneflower Solar would prepare an application and secure this approval.

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Exhibits

Exhibit 1: Project Location
Exhibit 2: Land Control and Project Footprint
Exhibit 3a: Preliminary Project Layout – MISO Scenario
Exhibit 3b: Preliminary Project Layout – Garvin Scenario
Exhibit 4: Configuration of Proposed Project Arrays
Exhibit 5: Custer Township Land Use History
Exhibit 6: Surface Waters and Watersheds in Project Area
Exhibit 7: Project Area Farmland Classification
Exhibit 8: County Ditches

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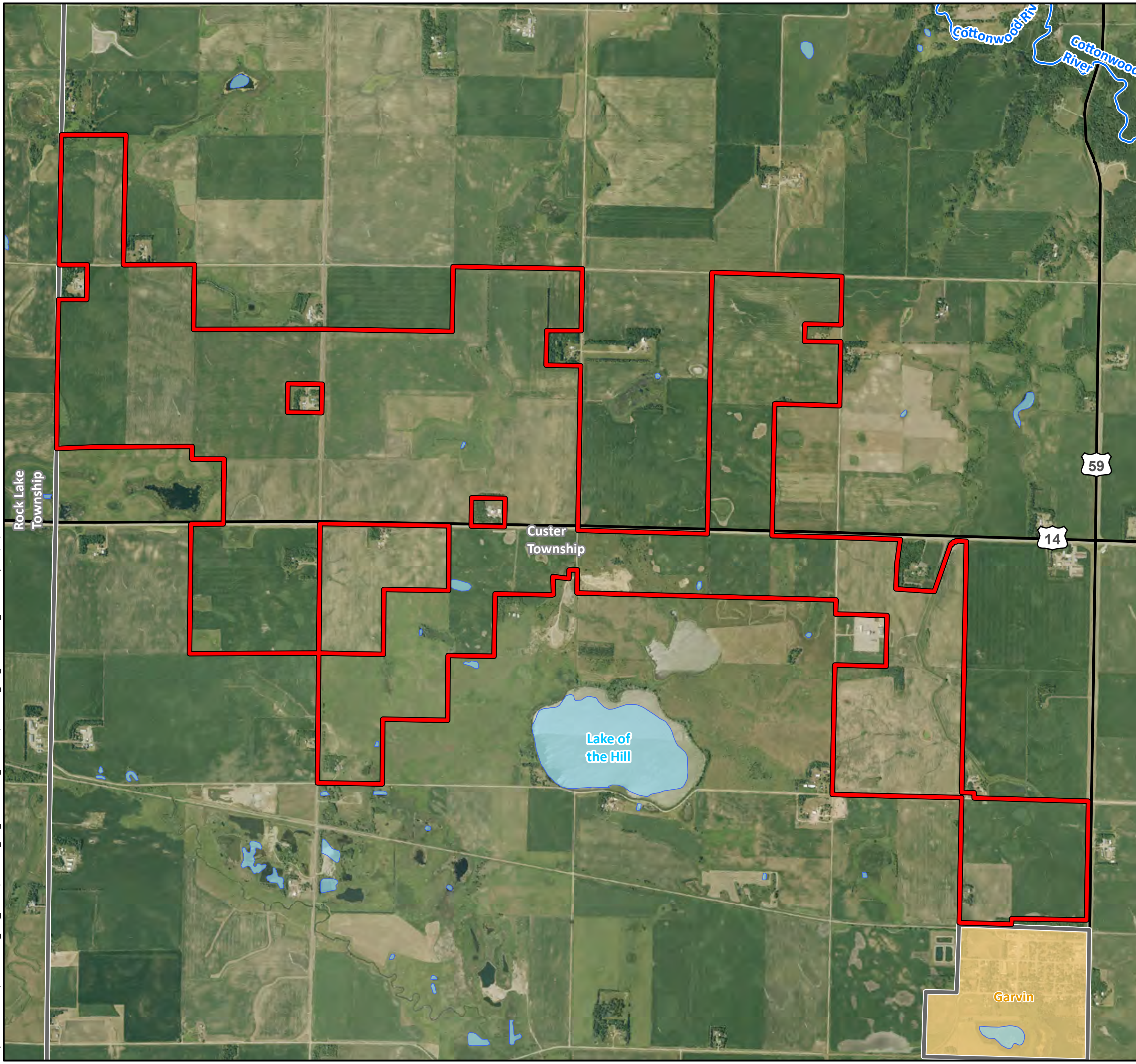

Westwood

Coneflower Energy Solar Project

Lyon County, Minnesota

Project Location

Exhibit 1 (June, 2024)

Legend

- Project Area
- County Boundary
- Civil Township Boundary
- City Boundary
- NHD Waterbody
- Named NHD Flowline
- Major Road

Data Source(s): Westwood (2024); NAIP Imagery (2023); MnGeo (2024); NHD (2024); U.S. Census Bureau (2023).

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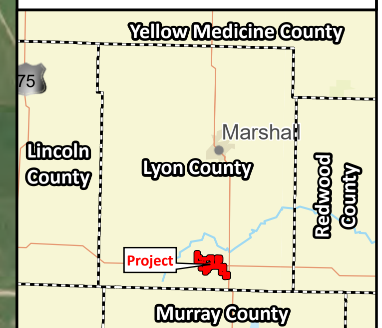

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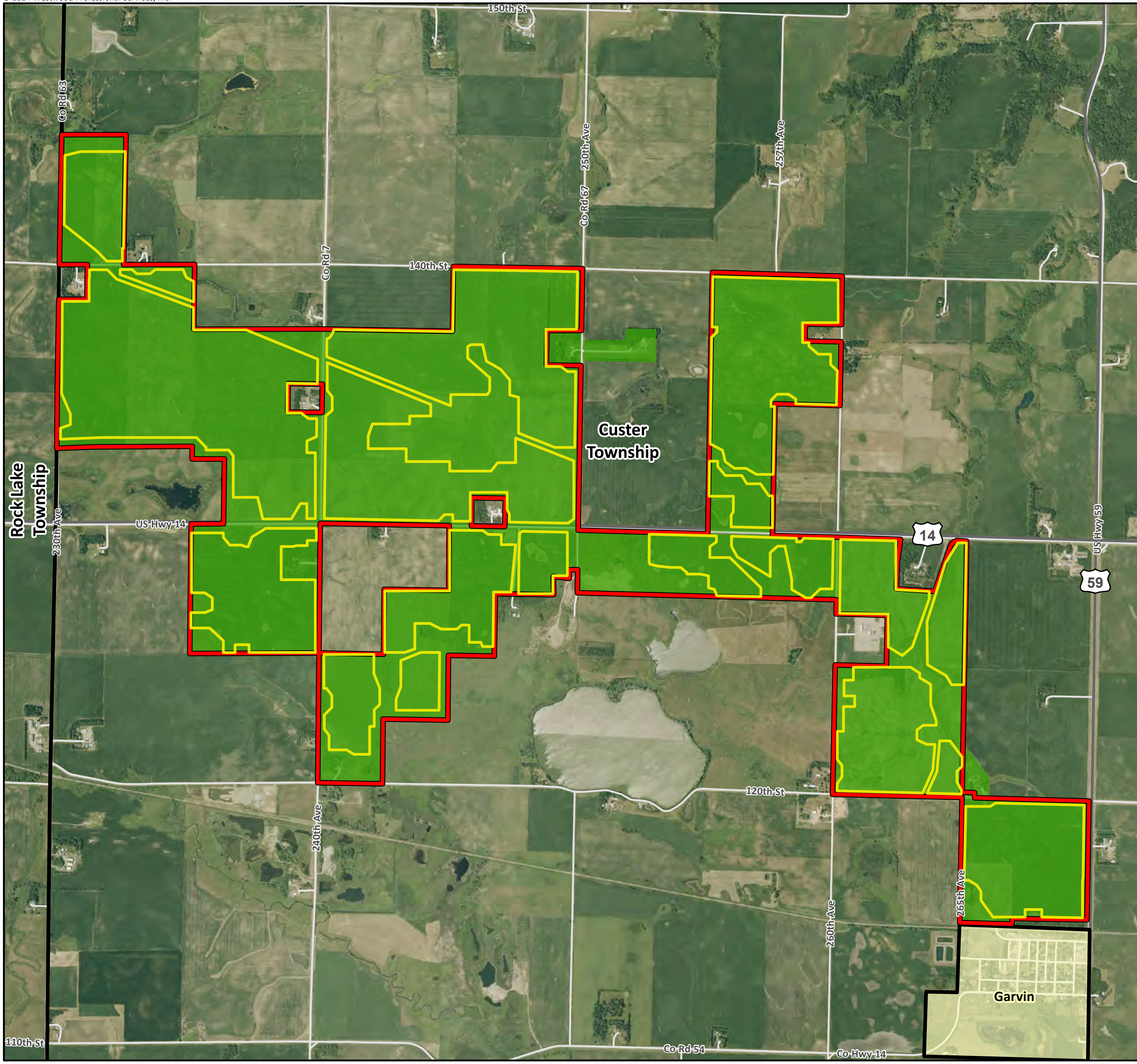

Westwood

Coneflower Energy Solar Project

Lyon County, Minnesota

Land Control and Project Footprint

Exhibit 2 (June, 2024)

Legend

- Project Area
- County Boundary
- Civil Township Boundary
- City Boundary
- Project Footprint
- Participating Parcel
- MN Highway
- Local Road

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

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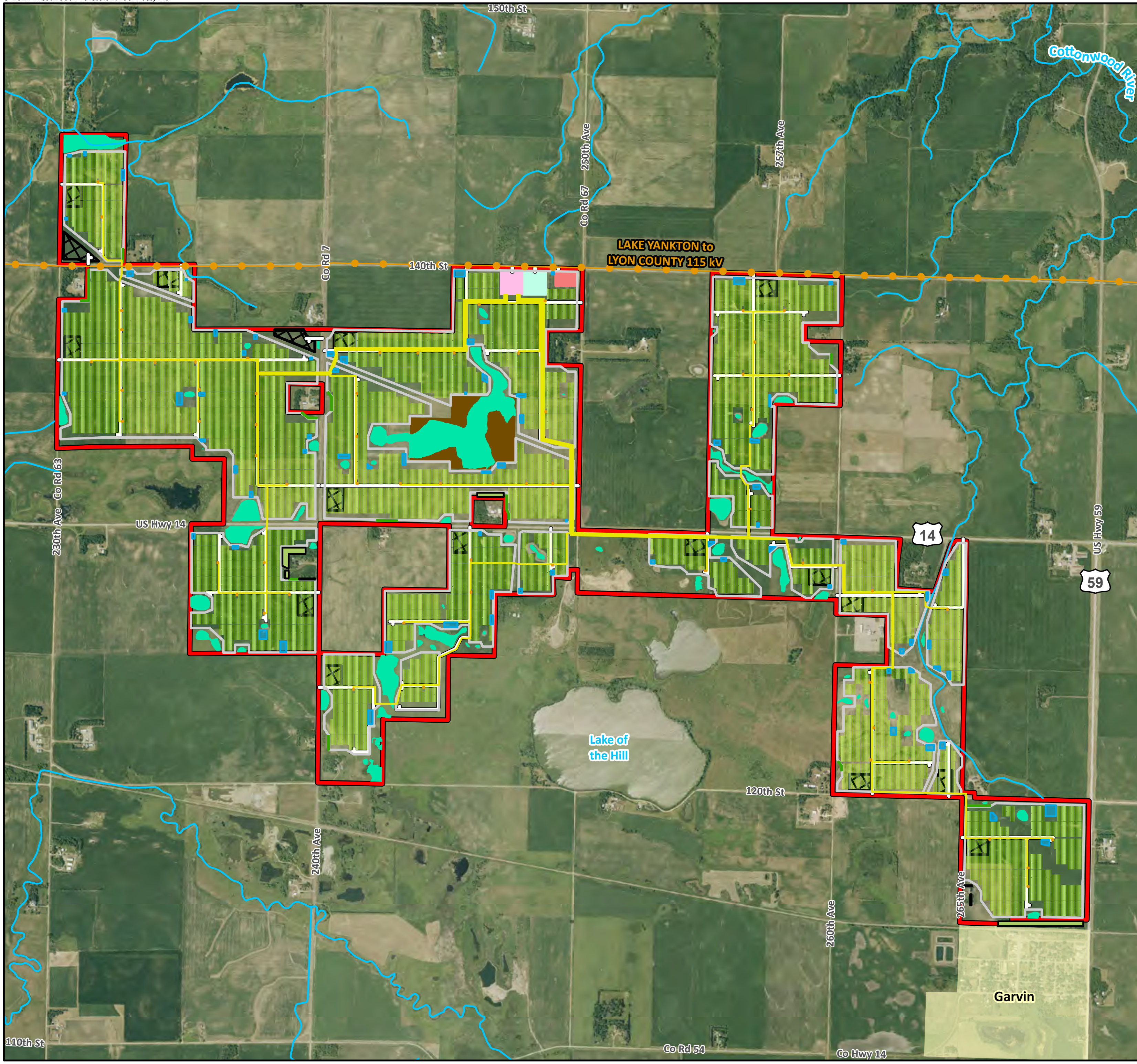

Westwood

Coneflower Energy Solar Project

Lyon County, Minnesota

Preliminary Project Layout - MISO Scenario

Exhibit 3a (June, 2024)

Legend

- Project Area
- City Boundary
- RIM Reserve Easement
- Security Fence
- Solar Array
- Access Road
- O&M Building
- Substation
- Switching Station
- Inverter
- Stormwater Basin
- Temporary Laydown Yard
- Existing Vegetative Buffer
- Proposed Vegetative Buffer
- Underground Collection Line
- Interconnecting Transmission Line
- Field Delineated Wetland (2023)
- NHD Flowline

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2023); MnGEO (2024); NHD (2023).

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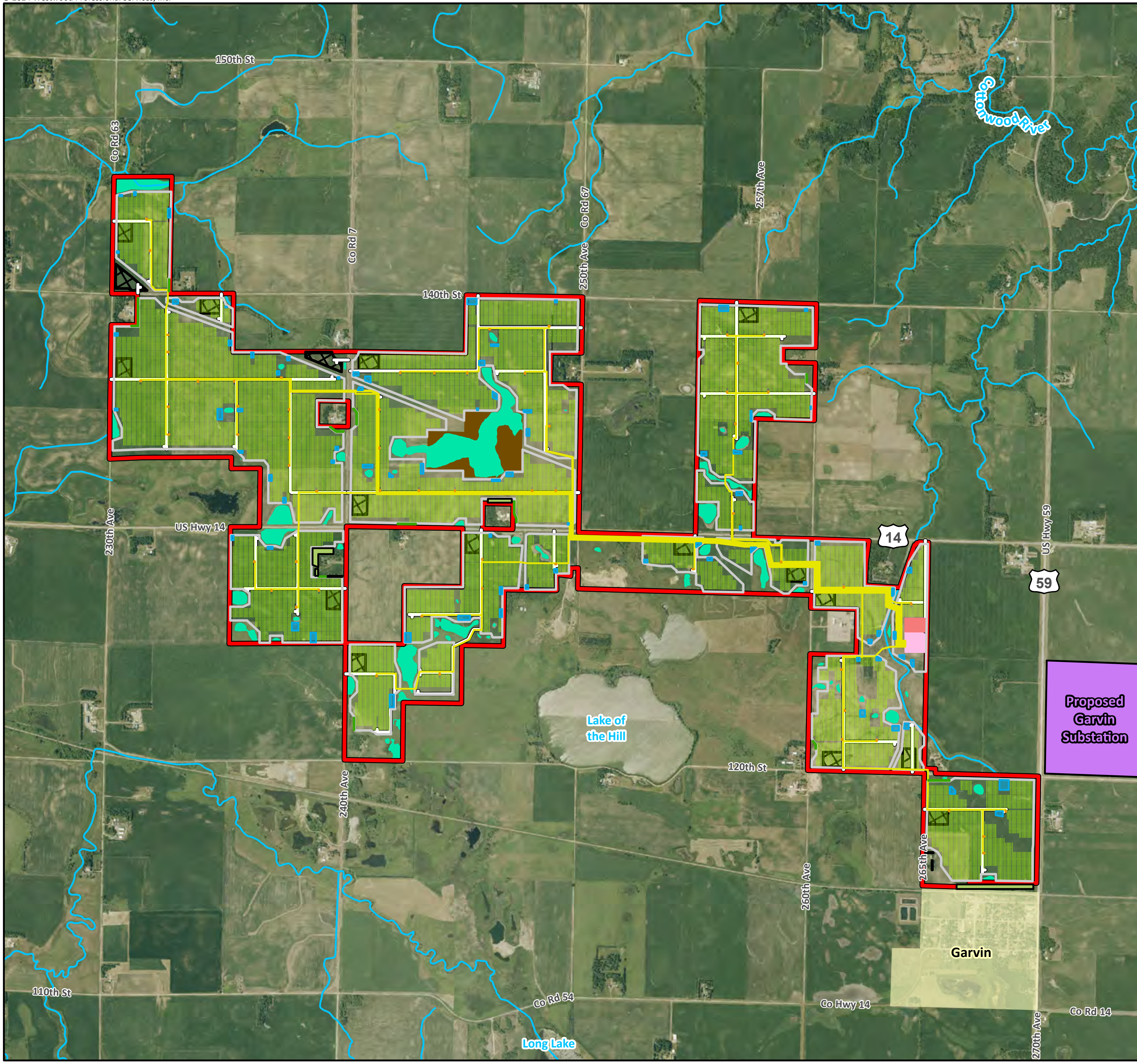

Westwood

Coneflower Energy Solar Project

Lyon County, Minnesota

Preliminary Project Layout - Garvin Scenario

Exhibit 3b (June, 2024)

Legend

- Project Area
- City Boundary
- RIM Reserve Easement
- Proposed Garvin Substation
- Security Fence
- Solar Array
- Access Road
- O&M Building
- Substation
- Inverter
- Stormwater Basin
- Temporary Laydown Yard
- Existing Vegetative Buffer
- Proposed Vegetative Buffer
- Underground Collection Line
- Field Delineated Wetland (2023)
- NHD Flowline

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2023); MnGEO (2024); NHD (2023).

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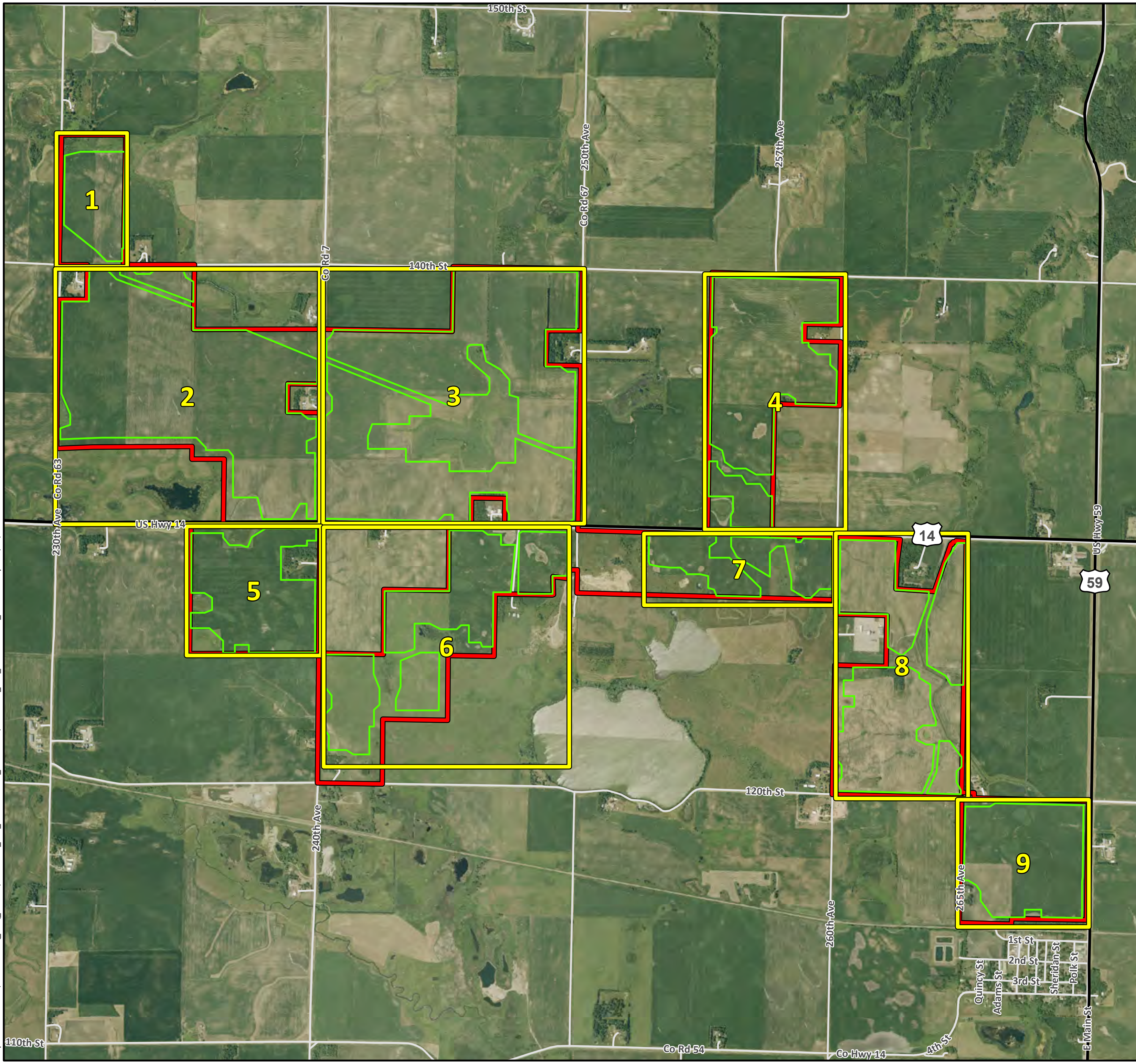

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Coneflower Energy Solar Project

Lyon County, Minnesota

Configuration of Proposed Project Arrays

Exhibit 4 (June, 2024)

Legend

- Project Area
- Construction Unit
- Project Footprint
- Major Road
- Local Road

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

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Coneflower Energy Solar Project

Lyon County, Minnesota

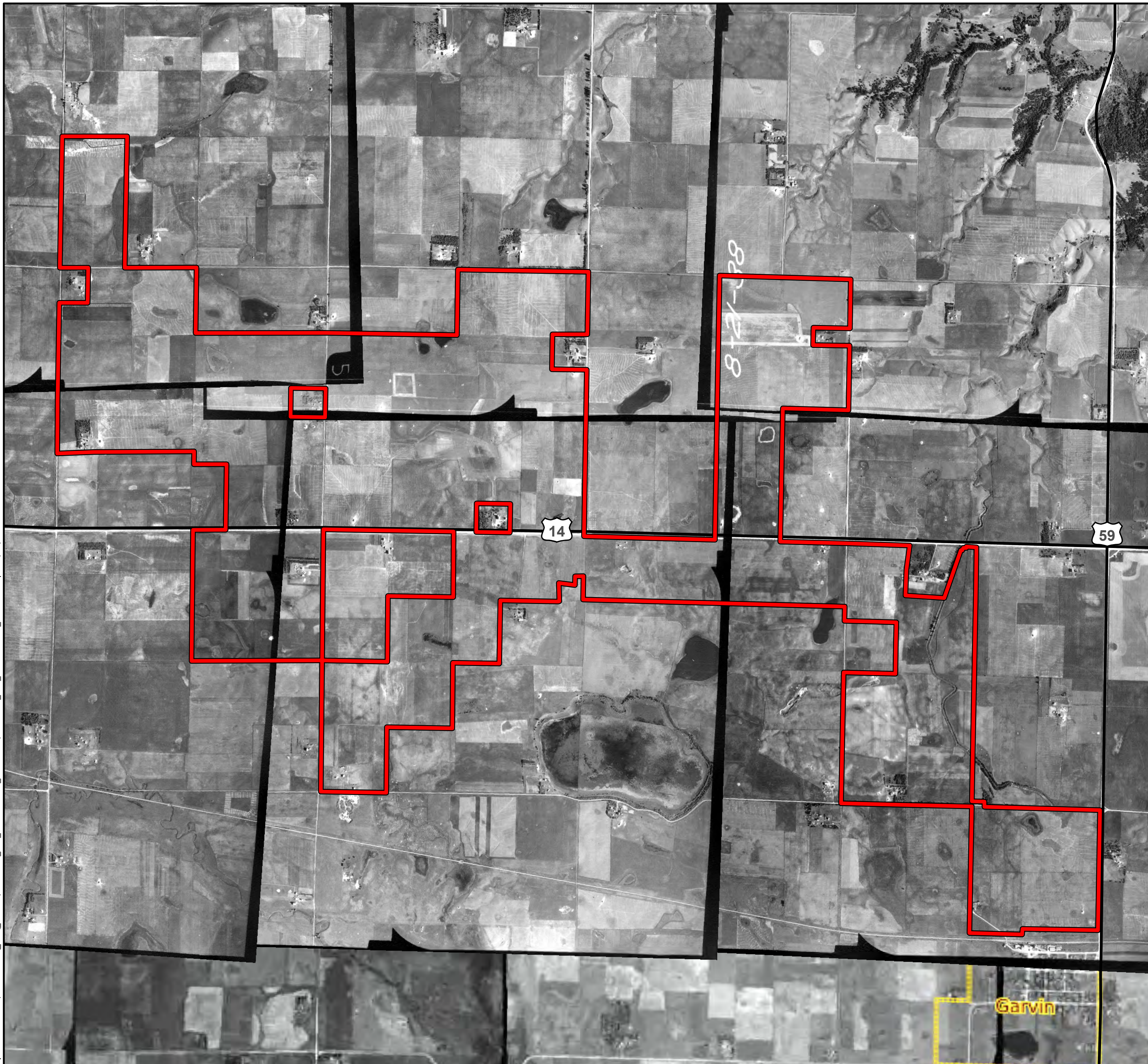
Custer Township Land Use History

Exhibit 5 (June, 2024)

Legend

Project Area

Major Road



Data Source(s): Westwood (2024); MHAPO (1938).

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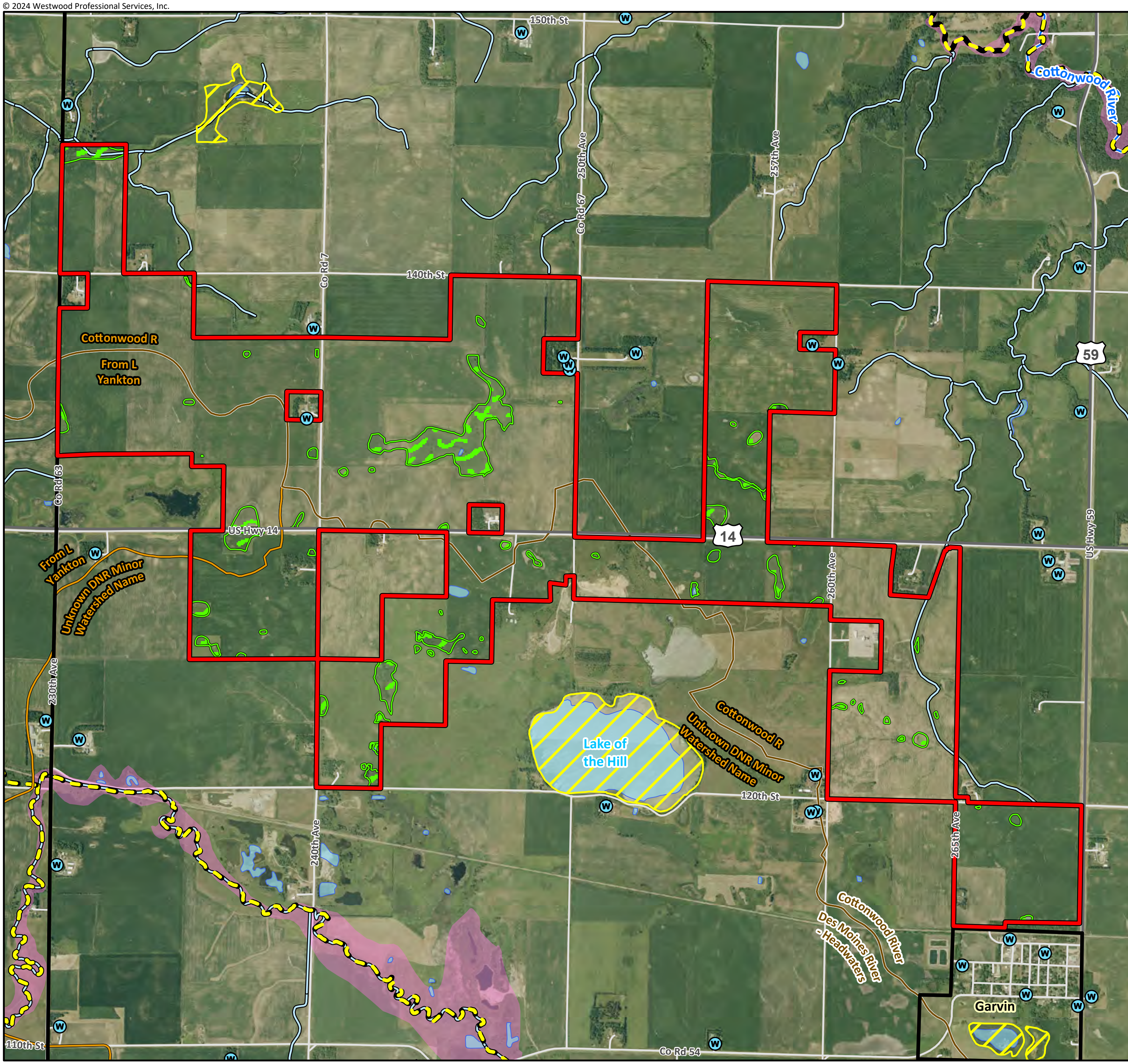
Coneflower Energy Solar Project

Lyon County, Minnesota

Surface Waters and Watersheds in Project Area

Exhibit 6 (June, 2024)



Legend

- Project Area
- Civil Township Boundary
- Major Watershed Boundary
- Minor Watershed Boundary
- Field Delineated Wetland (2023)
- NWI Wetland
- PWI Basin
- PWI Watercourse
- NHD Waterbody
- Named NHD Flowline
- Unnamed NHD Flowline
- MN Highway
- Local Road
- County Well Index

Floodzone

- FEMA Zone A Floodplain

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

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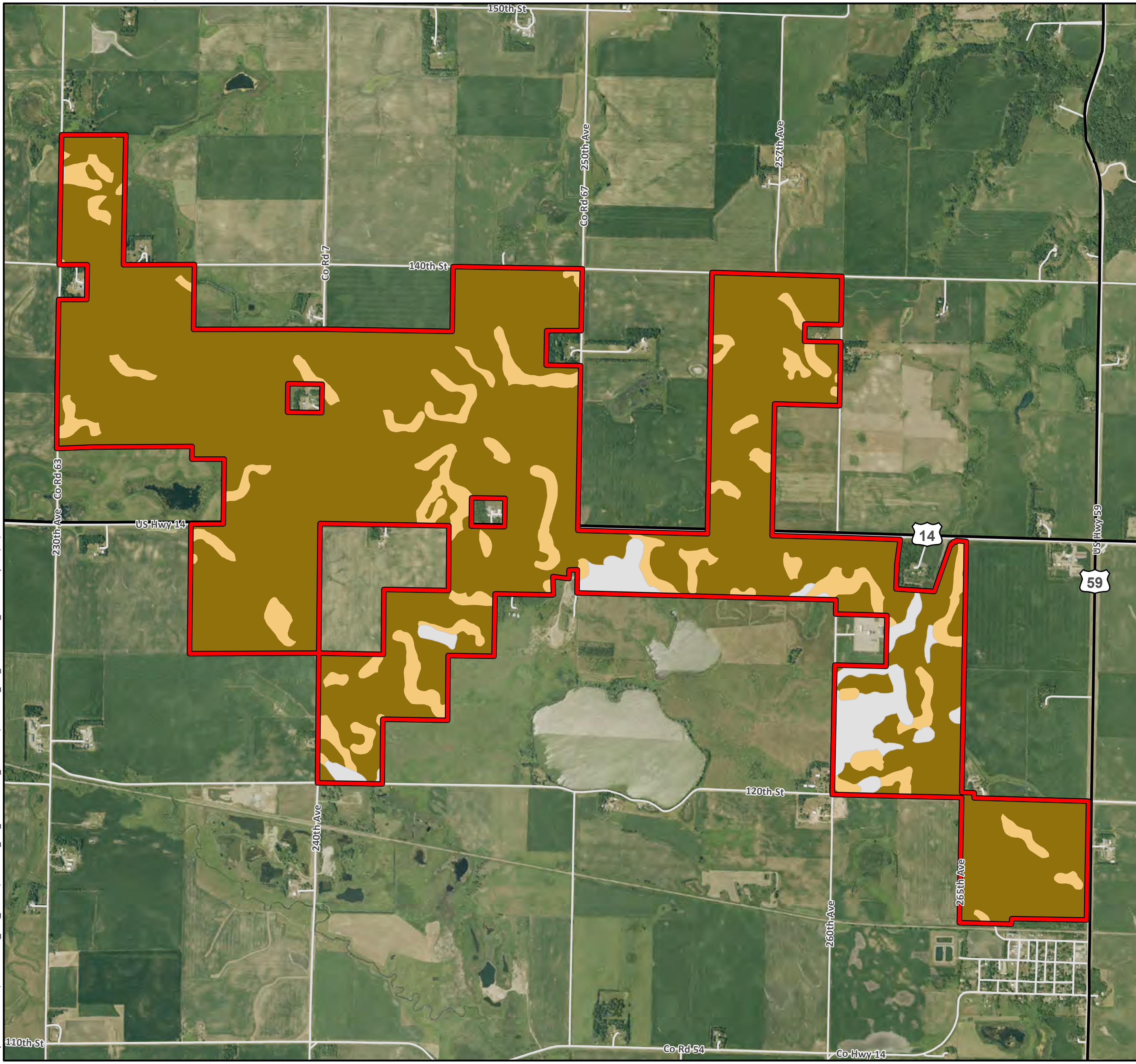

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Coneflower Energy Solar Project

Lyon County, Minnesota

Project Area Farmland Classification

Exhibit 7 (May, 2024)

Legend

Project Area

Major Road

Local Road

Prime Farmland Classification - Project Area Acreage (Percent Total)

Prime Farmland (All Categories) - 1,937.02 Acres (84.24%)

Farmland of statewide importance - 264.38 Acres (11.50%)

Not prime farmland - 97.96 Acres (4.26%)

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2023); SSURGO Soils Survey (Accessed 2024).

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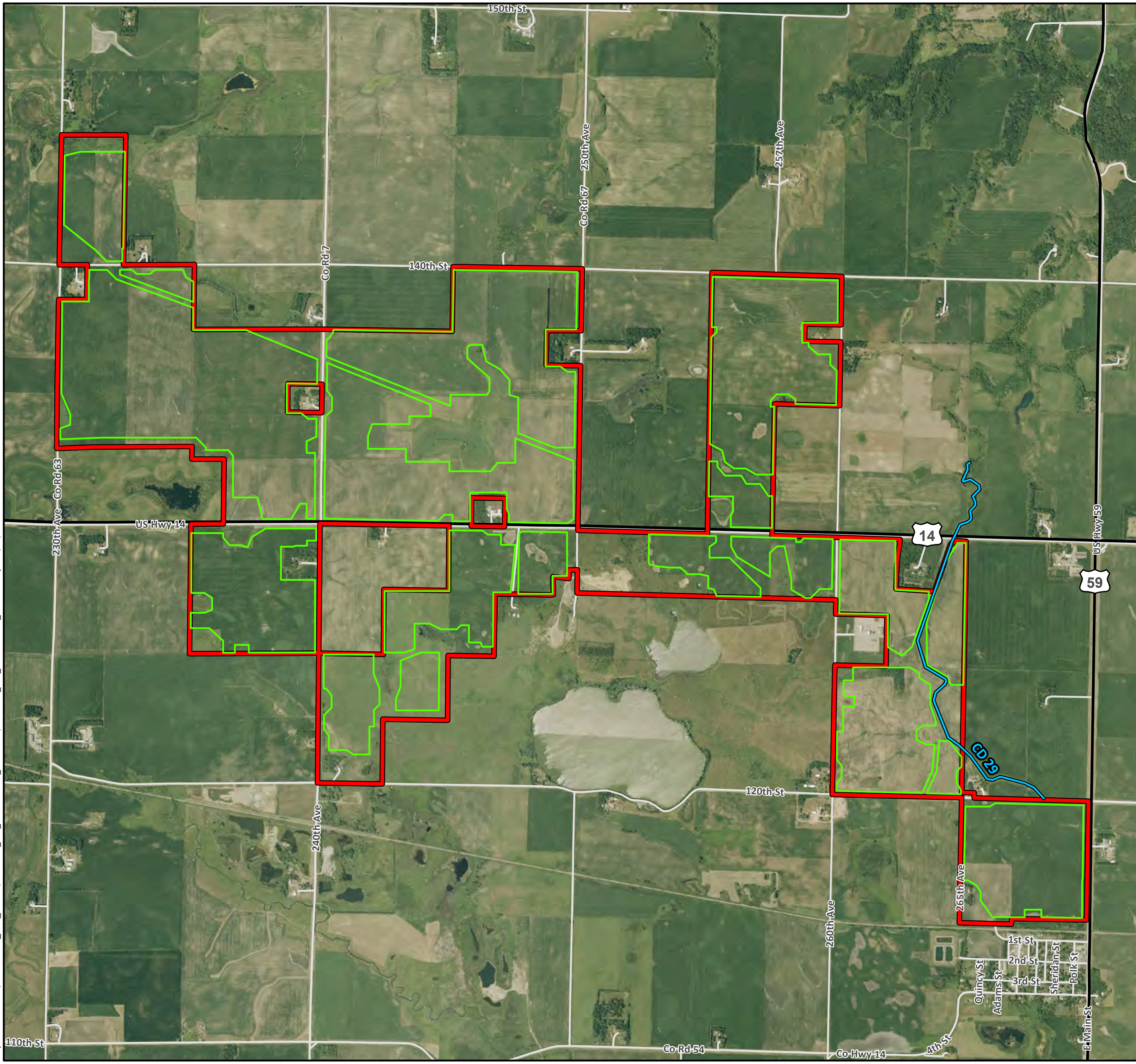

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Coneflower Energy Solar Project

Lyon County, Minnesota

County Ditches

Exhibit 8 (May, 2024)

Legend

- Project Area
- Proposed Fenceline
- Major Road
- Local Road

Lyon County Drainage

- Open Ditch

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2023); Lyon County Hub (2023).

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Appendix A

Selected Soils Physical Features, Classifications, Interpretations, and Limitations

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Appendix A - MISO Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
				Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
Feature Type[1]	Acres[2]	Map Unit Symbol[3]	Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Undeveloped Area	0.28	GP	Pits, gravel-Udipsamments complex		Greater than 16		0	Not prime farmland	NA		Yes	No	Low	NA	Not Rated
Access Road	0.05	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Access Road	7.15	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Access Road	1.18	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Access Road	6.68	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	1.06	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Access Road	0.14	J195B	Poinsett-Waubay silty clay loams, 1 to 6 percent slopes	fine-silty	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	1.42	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Access Road	0.17	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Access Road	1.05	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	0.15	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Access Road	0.06	J236A	Highpoint Lake silty clay, 0 to 2 percent slopes	fine	0-5	Moderately well drained	18	All areas are prime farmland	2s	No	No	No	Low	Severe	Somewhat
Access Road	0.05	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Access Road	0.38	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Access Road	0.01	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Access Road	2.37	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Access Road	0.18	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Access Road	3.12	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Basin	0.20	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Basin	2.72	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Basin	1.03	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Basin	2.79	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Basin	1.33	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	0.36	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	1.10	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Basin	0.08	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Basin	0.54	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Basin	0.12	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Basin	0.34	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Basin	0.01	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Basin	6.71	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	0.16	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Basin	0.02	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Basin	0.04	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Basin	0.50	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	8.10	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	410.95	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Fenced Area	138.75	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Fenced Area	416.10	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Fenced Area	47.33	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight

Appendix A - MISO Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
				Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
Feature Type[1]	Acres[2]	Map Unit Symbol[3]	Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Fenced Area	4.09	J195B	Poinsett-Waubay silty clay loams, 1 to 6 percent slopes	fine-silty	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Fenced Area	4.19	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Fenced Area	91.63	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Fenced Area	4.53	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	31.63	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Fenced Area	6.15	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	5.22	J236A	Highpoint Lake silty clay, 0 to 2 percent slopes	fine	0-5	Moderately well drained	18	All areas are prime farmland	2s	No	No	No	Low	Severe	Somewhat
Fenced Area	5.80	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Fenced Area	24.06	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Fenced Area	1.68	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Fenced Area	0.31	J48A	Southam silty clay loam, 0 to 1 percent slopes	fine	0-5	Very poorly drained	44	Not prime farmland	8w	Yes	Yes	No	Low	Severe	Slight
Fenced Area	10.32	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Fenced Area	196.33	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Fenced Area	0.39	J75A	Fordville loam, coteau, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Well drained	8	All areas are prime farmland	2s	No	No	No	Medium	Severe	Moderate
Fenced Area	2.08	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Fenced Area	5.38	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Fenced Area	0.09	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Fenced Area	7.20	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	184.06	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Inverter	0.17	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Inverter	0.03	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Inverter	0.20	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Inverter	0.02	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Inverter	0.05	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Inverter	0.02	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Inverter	0.01	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Inverter	0.04	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Inverter	0.01	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Inverter	0.07	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Laydown - Outside Project Area	2.78	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Laydown - Outside Project Area	0.50	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Laydown - Outside Project Area	4.77	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Laydown - Outside Project Area	1.35	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	19.87	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Laydown Yard	1.43	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Laydown Yard	17.39	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Laydown Yard	0.13	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	0.40	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Laydown Yard	1.31	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate

Appendix A - MISO Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
Feature Type[1]	Acres[2]	Map Unit Symbol[3]		Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
			Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Laydown Yard	0.05	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Laydown Yard	1.77	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Laydown Yard	3.49	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	0.05	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Laydown Yard	4.62	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
O&M	0.05	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
O&M	2.16	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
O&M	0.76	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Substation	2.22	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Substation	0.01	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Substation	2.85	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Switchyard	3.29	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Switchyard	0.08	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Switchyard	1.71	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	0.01	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	2.58	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	4.85	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	122.14	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	1.39	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Undeveloped Area	36.97	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Undeveloped Area	1.36	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	85.57	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	0.05	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	15.70	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	0.99	J12A	Marysland loam, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Poorly drained	12	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	2.09	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	0.19	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	90.25	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	3.74	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.52	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate

Appendix A - MISO Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
Feature Type[1]	Acres[2]	Map Unit Symbol[3]		Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
			Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Undeveloped Area	14.00	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	5.76	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.76	J25A	Rauville silty clay loam, 0 to 1 percent slopes, frequently flooded	fine-silty	0-5	Very poorly drained	27	Not prime farmland	6w	Yes	Yes	No	Low	Severe	Slight
Undeveloped Area	0.01	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	8.83	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	23.22	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Undeveloped Area	11.61	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Undeveloped Area	7.38	J48A	Southam silty clay loam, 0 to 1 percent slopes	fine	0-5	Very poorly drained	44	Not prime farmland	8w	Yes	Yes	No	Low	Severe	Slight
Undeveloped Area	1.13	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Undeveloped Area	78.68	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	0.65	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	1.20	J75A	Fordville loam, coteau, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Well drained	8	All areas are prime farmland	2s	No	No	No	Medium	Severe	Moderate
Undeveloped Area	0.44	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.13	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Undeveloped Area	0.38	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Undeveloped Area	0.06	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.14	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.58	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	52.27	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Total	**2299.18**														

1. The proposed site layout feature that encompases the soil type.
2. Data obtained by merging facility polygons with the SSURGO spatial date in ArcGIS. Summations were performed in Microsoft Excel.
3. Obtained directly by query of the SSURGO geospatial database.
4. Representative slope values are taken directly from the SSURGO database. The SSURGO2 database provides representative slope values for all component soil series. Slope classes represent the slope class grouping in percent that contains the representative slope value for a major component soil series. For example, a soil mapped in the 2-6% slope class has an average slope of 4%, which is within the 0-5% slope range.
5. Drainage class as taken directly from the SSURGO database. ED, PD, and VPD indicate Excessively Drained, Poorly Drained, and Very Poorly Drained soils, respectively.
6. Topsoil thickness is the aggregate thickness of the A horizons described in the SSURGO database.
7. Includes soils in land capability classes 4e through 8e or that have a representative slope value greater than or equal to 9%.
8. Includes soils in wind erodibility groups 1 and 2.
9. NRCS Web Soil Survey indicates a Low rating as the potential for compaction being insignificant. The soil is able to support standard equipment with minimal compaction. A Medium rating is defined as having significant potential for compaction. After the initial compaction (i.e. the first equipment pass), this soil is able to support standard equipment with only minimal increases in soil density.
10. Rutting potential hazard based on the soil strength as indicated by engineering texture classification, drainage class, and slope. In general, soils on low slopes in wetter drainage classes, and comprised of sediments with low strength will have potential rutting hazards.
11. Slight drought vulnerable soils are either in lowlying parts of the landscape where plant roots may exploit near-surface ground water or are in areas where precipitation is much higher than potential evapotranspitation, and may be water stressed in an extremely dry year. Somewaht drought vulnerable soils have greater than 25 cm of water storage and annual precipitation is generally adequate for plant growth, and some water stress may occur in dry years. Moderately drought vulnerable soils are such that in an average year, some water stress may occur, but in a good year, plant available water is generally adequate. Water storage is in the range of 15 to 25 cm. Drought vulnerable soils are such that drought conditions generally occur every year. The soil may have low water storage capacity (5 to 15 cm) and the site may have low annual precipitation or high annual temperature or both.

Appendix A - Garvin Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
Feature Type[1]	Acres[2]	Map Unit Symbol[3]		Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
			Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Undeveloped Area	0.28	GP	Pits, gravel-Udipsamments complex		Greater than 16		0	Not prime farmland	NA		Yes	No	Low	NA	Not Rated
Access Road	0.05	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Access Road	7.14	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Access Road	1.18	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Access Road	6.94	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	2.37	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Access Road	0.14	J195B	Poinsett-Waubay silty clay loams, 1 to 6 percent slopes	fine-silty	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	1.42	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Access Road	0.17	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Access Road	1.05	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Access Road	0.15	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Access Road	0.06	J236A	Highpoint Lake silty clay, 0 to 2 percent slopes	fine	0-5	Moderately well drained	18	All areas are prime farmland	2s	No	No	No	Low	Severe	Somewhat
Access Road	0.05	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Access Road	0.38	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Access Road	0.01	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Access Road	1.06	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Access Road	0.18	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Access Road	3.26	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Basin	0.20	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Basin	2.72	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Basin	1.03	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Basin	2.79	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Basin	0.36	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	1.10	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Basin	0.08	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Basin	0.54	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Basin	0.12	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Basin	0.34	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Basin	0.01	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Basin	6.71	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	1.33	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Basin	0.16	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Basin	0.02	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Basin	0.04	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Basin	0.50	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	8.10	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	416.09	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Fenced Area	138.86	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Fenced Area	420.07	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate

Appendix A - Garvin Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
				Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
Feature Type[1]	Acres[2]	Map Unit Symbol[3]	Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Fenced Area	4.09	J195B	Poinsett-Waubay silty clay loams, 1 to 6 percent slopes	fine-silty	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Fenced Area	4.19	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Fenced Area	89.05	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Fenced Area	4.53	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	31.63	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Fenced Area	6.15	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	5.22	J236A	Highpoint Lake silty clay, 0 to 2 percent slopes	fine	0-5	Moderately well drained	18	All areas are prime farmland	2s	No	No	No	Low	Severe	Somewhat
Fenced Area	5.80	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Fenced Area	24.06	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Fenced Area	1.68	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Fenced Area	0.31	J48A	Southam silty clay loam, 0 to 1 percent slopes	fine	0-5	Very poorly drained	44	Not prime farmland	8w	Yes	Yes	No	Low	Severe	Slight
Fenced Area	10.32	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Fenced Area	0.39	J75A	Fordville loam, coteau, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Well drained	8	All areas are prime farmland	2s	No	No	No	Medium	Severe	Moderate
Fenced Area	196.33	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Fenced Area	47.33	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Fenced Area	2.08	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Fenced Area	5.38	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Fenced Area	0.09	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Fenced Area	7.20	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Fenced Area	182.03	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Inverter	0.17	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Inverter	0.03	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Inverter	0.20	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Inverter	0.05	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Inverter	0.02	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Inverter	0.01	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Inverter	0.04	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Inverter	0.02	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Inverter	0.01	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Inverter	0.07	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Laydown - Outside Project Area	2.78	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Laydown - Outside Project Area	0.50	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Laydown - Outside Project Area	4.77	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Laydown - Outside Project Area	1.35	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	19.87	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Laydown Yard	1.43	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Laydown Yard	17.39	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Laydown Yard	0.40	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight

Appendix A - Garvin Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations															
Feature Type[1]	Acres[2]	Map Unit Symbol[3]		Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
			Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Laydown Yard	1.31	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Laydown Yard	0.05	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Laydown Yard	1.77	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Laydown Yard	3.49	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	0.13	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Laydown Yard	0.05	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Laydown Yard	4.62	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
O&M	1.53	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
O&M	1.43	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Substation	0.36	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Substation	0.92	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Substation	2.57	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Substation	1.22	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.04	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	2.55	J100D2	Buse, eroded-Wilno complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	52	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	6.28	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	120.73	J101B	Hokans-Svea complex, 1 to 4 percent slopes	fine-loamy	0-5	Well drained	15	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	1.49	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Undeveloped Area	36.89	J104A	Svea loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	10	All areas are prime farmland	1	No	No	No	Low	Severe	Moderate
Undeveloped Area	1.38	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	78.68	J106B	Barnes, occasional saturation-Buse-Svea complex, 1 to 6 percent slopes	fine-loamy	0-5	Well drained	14	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	0.05	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	15.70	J11A	Vallers clay loam, 0 to 2 percent slopes	fine-loamy	0-5	Poorly drained	14	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	0.99	J12A	Marysland loam, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Poorly drained	12	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	2.09	J199A	Fulda silty clay, 0 to 2 percent slopes	fine	0-5	Poorly drained	13	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	0.97	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	89.46	J1A	Parnell silty clay loam, depressional, 0 to 1 percent slopes	fine	0-5	Very poorly drained	22	Prime farmland if drained	3w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	3.74	J227D2	Buse, moderately eroded-Sandberg complex, 12 to 18 percent slopes	fine-loamy	45428	Well drained	12	Not prime farmland	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.53	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	14.00	J232B	Barnes, occasional saturation-Buse-Arvilla complex, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	8	All areas are prime farmland	2e	No	No	No	Medium	Severe	Moderate
Undeveloped Area	5.76	J235C2	Buse, moderately eroded-Barnes, moderately eroded-Arvilla complex, 6 to 12 percent slopes	fine-loamy	45428	Well drained	8	Farmland of statewide importance	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.76	J25A	Rauville silty clay loam, 0 to 1 percent slopes, frequently flooded	fine-silty	0-5	Very poorly drained	27	Not prime farmland	6w	Yes	Yes	No	Low	Severe	Slight
Undeveloped Area	0.24	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	8.60	J26B	Darnen loam, 2 to 6 percent slopes	fine-loamy	0-5	Well drained	24	All areas are prime farmland	2e	No	No	No	Low	Severe	Moderate
Undeveloped Area	0.22	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Undeveloped Area	23.00	J31B	Arvilla-Sandberg complex, 2 to 6 percent slopes	sandy	0-5	Somewhat excessively drained	9	Not prime farmland	4e	No	Yes	No	Medium	Moderate	Drought Vulnerable
Undeveloped Area	11.61	J42C	Sandberg-Arvilla complex, 6 to 12 percent slopes	sandy	45428	Excessively drained	10	Not prime farmland	6s	No	Yes	No	Medium	Moderate	Drought Vulnerable
Undeveloped Area	7.38	J48A	Southam silty clay loam, 0 to 1 percent slopes	fine	0-5	Very poorly drained	44	Not prime farmland	8w	Yes	Yes	No	Low	Severe	Slight
Undeveloped Area	1.13	J57A	Balaton loam, 1 to 3 percent slopes	fine-loamy	0-5	Moderately well drained	13	All areas are prime farmland	2s	No	No	No	Low	Severe	Moderate
Undeveloped Area	0.48	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight

Appendix A - Garvin Scenario: Selected Soil Physical Features, Classifications, and Interpretations and Limitations

Feature Type[1]	Acres[2]	Map Unit Symbol[3]		Selected Soil Physical Features					Selected Soil Classifications				Construction/Reclamation Interpretations and Limitations		
			Map Unit Name[3]	Particle Size Family[3]	Slope Range[4]	Drainage Class[5]	Topsoil Thickness[6]	Prime Farmland[3]	Land Capability Classification[3]	Hydric Soil Rating[3]	Highly Erodible Water[7]	Highly Erodible Wind[8]	Compaction Rating[9]	Rutting Hazard[10]	Drought Vulnerability[11]
Undeveloped Area	85.74	J107A	Lakepark-Roliss-Parnell, depressional, complex, 0 to 3 percent slopes	fine-loamy	0-5	Poorly drained	27	Prime farmland if drained	2w	Yes	No	No	Low	Severe	Slight
Undeveloped Area	1.20	J75A	Fordville loam, coteau, 0 to 2 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Well drained	8	All areas are prime farmland	2s	No	No	No	Medium	Severe	Moderate
Undeveloped Area	0.44	J75B	Renshaw-Fordville loams, coteau, 2 to 6 percent slopes	fine-loamy over sandy or sandy-skeletal	0-5	Somewhat excessively drained	8	All areas are prime farmland	4s	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.13	J7A	Sverdrup sandy loam, 0 to 2 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3s	No	No	No	Medium	Moderate	Moderate
Undeveloped Area	0.38	J7B	Sverdrup sandy loam, 2 to 6 percent slopes	sandy	0-5	Well drained	12	Farmland of statewide importance	3e	No	No	No	Medium	Moderate	Moderate
Undeveloped Area	0.05	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.15	J95E	Buse, stony-Wilno complex, 18 to 25 percent slopes	fine-loamy	Greater than 16	Well drained	52	Not prime farmland	6e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	0.96	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Undeveloped Area	51.88	J96C2	Barnes-Buse complex, 6 to 12 percent slopes, moderately eroded	fine-loamy	45428	Well drained	8	Farmland of statewide importance	4e	No	Yes	No	Medium	Severe	Moderate
Total	**2299.16**														

1. The proposed site layout feature that encompases the soil type.
2. Data obtained by merging facility polygons with the SSURGO spatial date in ArcGIS. Summations were performed in Microsoft Excel.
3. Obtained directly by query of the SSURGO geospatial database.
4. Representative slope values are taken directly from the SSURGO database. The SSURGO2 database provides representative slope values for all component soil series. Slope classes represent the slope class grouping in percent that contains the representative slope value for a major component soil series. For example, a soil mapped in the 2-6% slope class has an average slope of 4%, which is within the 0-5% slope range.
5. Drainage class as taken directly from the SSURGO database. ED, PD, and VPD indicate Excessively Drained, Poorly Drained, and Very Poorly Drained soils, respectively.
6. Topsoil thickness is the aggregate thickness of the A horizons described in the SSURGO database.
7. Includes soils in land capability classes 4e through 8e or that have a representative slope value greater than or equal to 9%.
8. Includes soils in wind erodibility groups 1 and 2.
9. NRCS Web Soil Survey indicates a Low rating as the potential for compaction being insignificant. The soil is able to support standard equipment with minimal compaction. A Medium rating is defined as having significant potential for compaction. After the initial compaction (i.e. the first equipment pass), this soil is able to support standard equipment with only minimal increases in soil density.
10. Rutting potential hazard based on the soil strength as indicated by engineering texture classification, drainage class, and slope. In general, soils on low slopes in wetter drainage classes, and comprised of sediments with low strength will have potential rutting hazards.
11. Slight drought vulnerable soils are either in low lying parts of the landscape where plant roots may exploit near-surface ground water or are in areas where precipitation is much higher than potential evapotranspiration, and may be water stressed in an extremely dry year. Somewhat drought vulnerable soils have greater than 25 cm of water storage and annual precipitation is generally adequate for plant growth, and some water stress may occur in dry years. Moderately drought vulnerable soils are such that in an average year, some water stress may occur, but in a good year, plant available water is generally adequate. Water storage is in the range of 15 to 25 cm. Drought vulnerable soils are such that drought conditions generally occur every year. The soil may have low water storage capacity (5 to 15 cm) and the site may have low annual precipitation or high annual temperature or both.

Appendix B

NRCS Soil Map for the Project

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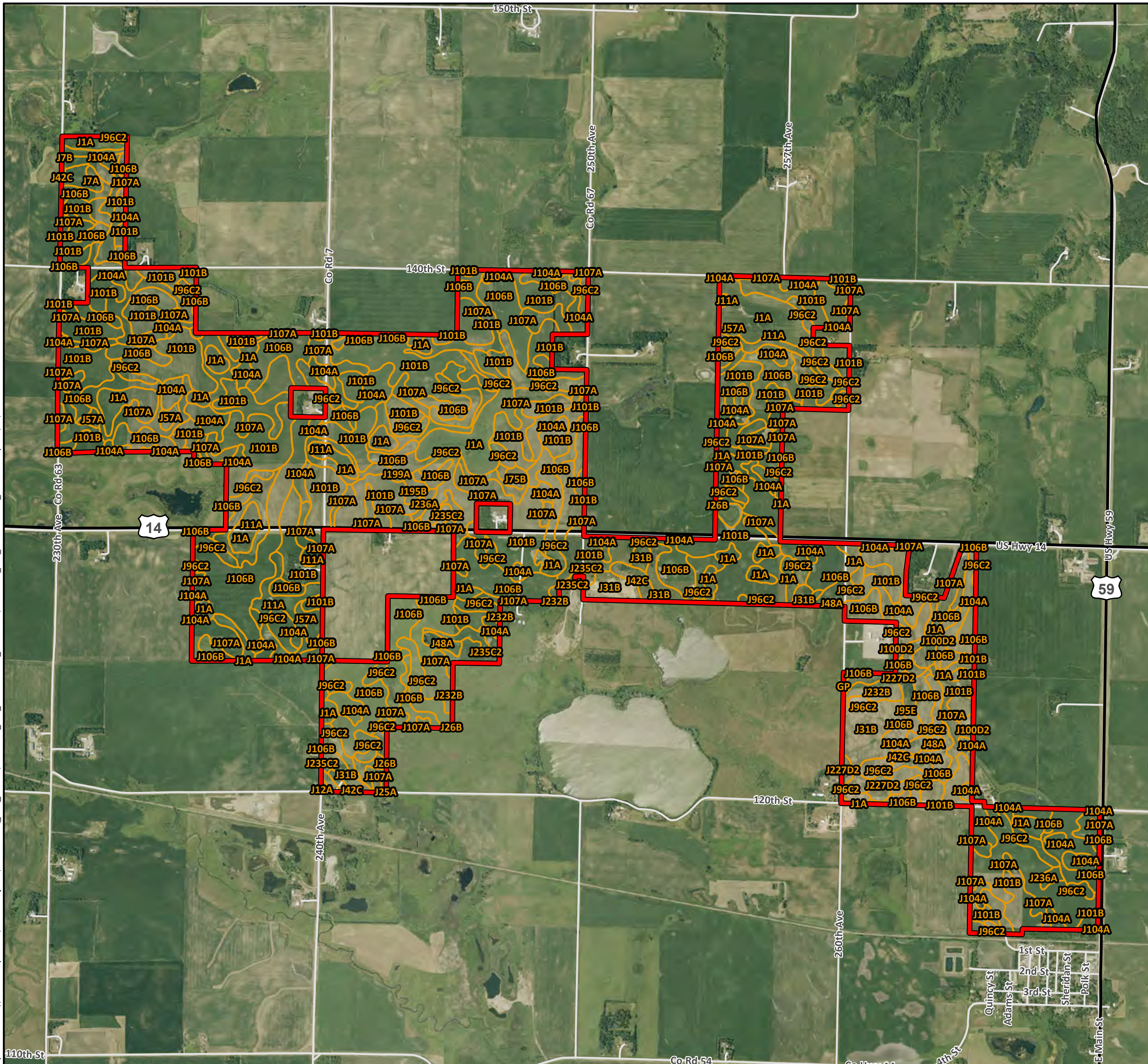

Westwood

Coneflower Energy Solar Project

Lyon County, Minnesota

NRCS Soils

Appendix B

Legend

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

Data Source(s): Westwood (2024); NAIP (2023); U.S. Census Bureau (2023); NRCS SSURGO Soils Survey (Accessed 2024).

N

0 2,700 Feet

Map Document: \\westwoodps.local\Global Projects\0042396.00_GIS_ArcPro\R0042396_040_AIMPExhibits_20240423\R0042396_040_AIMPExhibits_20240423.aprx 5/31/2024 1:37 PM LMaldonado

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