Appendix D

Revised
Vegetation Management Plan

Louise Solar Project
Mower County, Minnesota

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Louise Solar Project

Vegetation Establishment and Management Plan

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Abbreviations and Definitions

VMP	Vegetation Establishment and Management Plan
Carbon Sequestration	Natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.
Project Area	Land area controlled by the Developer with a purchase or lease.
State Trunk Highway	Regional state highway route.
DC	Direct Current
AC	Alternating Current
kV	Kilovolt
MNDNR	Minnesota Department of Natural Resources
ECS	Minnesota Ecological Classification System
NHD	National Hydrography Dataset
VMU	Vegetation Management Unit
AIMP	Agricultural Impact Mitigation Plan
SPA	Solar Permit Application
Seedbed	Upper soil layers where seed is present.
Soil Compaction	Soils that have been compacted by surface pressure and weight.
Soil Decompaction	Methods to loosen compacted soils.
BMPs	Best Management Practices
Drain Tile	Underground drainage system for water removal.
Monitoring	Observational and parametric assessment of site conditions.

Contents

Vegetation Establishment and Management Plan Overview

The Project vegetation establishment and management goals and objectives are as follows:

- Establish native perennial vegetation that:
    - Creates pollinator and other wildlife habitat.
    - Improves soil health through accumulation of in soil organic matter.
    - Increases water infiltration by restricting overland flow and opening the soil structure.
    - Protects surface water by minimizing soil erosion and overland transport.
    - Protects ground water through limited and directed use of chemical fertilizers and pesticides.
- Implement short and long term vegetation management goals using a range of management tools, including mowing, herbicides, reduction of encroaching woody vegetation, and other adaptive approaches.

Any changes to the above stated management goals and objectives, including major changes to management techniques, will be discussed with EERA before being implemented.

Site Description

Project Description

As shown in **Figure 1**, the 613 acre Project Area is located on the boundary between Lodi and Adams Townships in Mower County, Minnesota. The Project Area is located on the east side of the Town of Adams where it is bisected by State Trunk Highway 56. Located approximately 17 miles southeast of the City of Austin. A perennial stream is located to the immediate northwest of the Project Area. A smaller ditched tributary stream is located outside of the Project Area where highway 56 is located. Both tributary streams merge downstream and discharge in the Little Cedar River located 3.5 miles west of the Project Area.

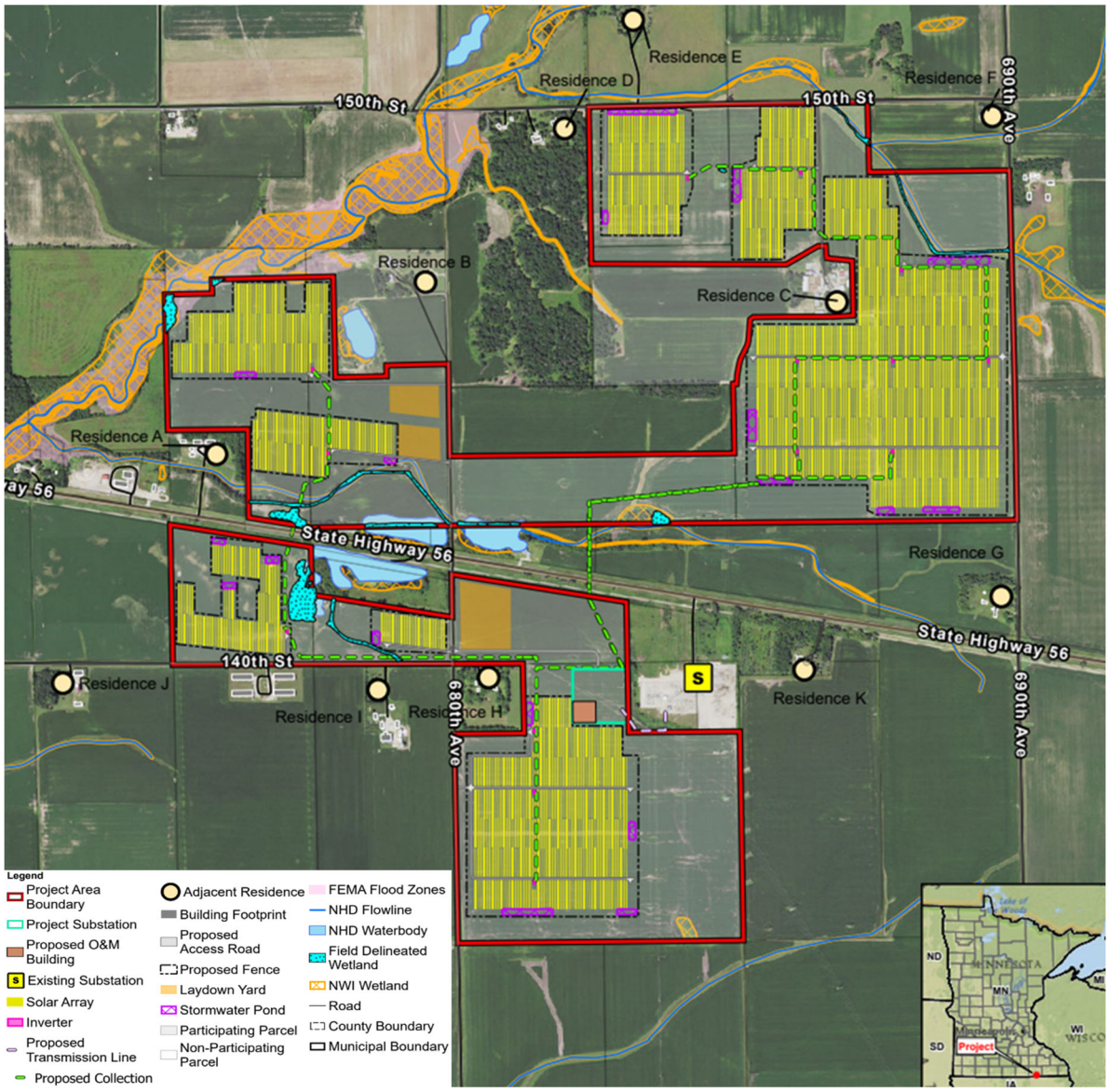

Figure 1. Project location and preliminary layout.

Within the Project Area, 325 acres will be comprised of solar equipment. This area is defined as the "Preliminary Development Area" consisting of solar panels mounted on racking systems and pile foundations. A single-axis tracking system will allow the solar panels to track the sun from east to west maximizing energy production. Energy from the solar panels is directed through an underground electrical collection system to inverters where the power is converted from direct current (DC) to alternating current (AC) power. The power is then transmitted to a step-up transformer located at the project substation from 34.5 kV to 161 kV. Generated power is then carried to ITC Midwest's Adams Substation located immediately adjacent to the eastern Project Area boundary via a proposed above-ground, 161-kV transmission line where it connects to the energy grid. The short transmission line will be approximately 700-1,000 feet in length with several pole structures. Solar panels will be accessible via a network of gravel access roads for maintenance purposes, and the portions of the project occupied by equipment will be surrounded by security fencing. Stormwater from the site will be managed through a series of planned stormwater ponds.

Subject to final design, solar arrays will be laid out generally as depicted on Figure 1 and in a manner that minimizes site grading and length of underground collection; avoids various constraints, including wetlands; and maximizes energy production.

The right-of-way (ROW) is generally sited through tilled cropland that is regularly disturbed with agricultural equipment. Minimal maintenance is expected within the ROW. However, Louise Solar has the right under the easement agreement to clear woody material within the ROW if the land is no longer maintained by the landowner as cropland. This would involve removing emergent trees and large shrubs, otherwise the landowners would be responsible for vegetation management in ROW areas outside of the arrays.

Surrounding Land Use

Land use in the Project Area is characterized as agricultural with more than 96 percent converted to row crop agriculture (Westwood, 2021). Aside from agricultural fields, the landscape also supports a patchwork of woodlands, wetlands, and drainages. The topography of the Project Area is generally flat with slopes ranging from 1 to 5 percent. The Project Area is surrounded by farmsteads with residences and outbuildings. Most of these farmsteads are at least partially surrounded by woodlands or shelterbelts, which fractionally prevents uninterrupted views of the surrounding landscape.

The Project is located within a rural landscape, and therefore the primary land use in the Project Area is agricultural (96.2 percent). The remainder of the Project Area consists of developed land (2.3 percent) and a small amount of herbaceous or hay/pasture land (1.2 percent). The remaining identified land uses include deciduous forest, emergent herbaceous wetlands, barren land, and open water. In total, the remaining land uses comprise a minor 0.3% of the Project Area. Most of the agricultural land in the Project Area is subject to row-crop agriculture, such as corn and soybeans. Developed land within the Project Area generally consists of public roads, namely 680th Avenue, 690th Avenue, 140th Street and 150th Street. The

small area (8.3 acre) of herbaceous/hay/pasture lands within the Project Area is associated with roadside ditches and unnamed streams.

Table 1: Land Use Within the Project Area.

Land Use Type	Acres in Project Area	Percent of Total Acreage
Agricultural	590.1	96.2%
Developed	14.3	2.3%
Herbaceous/Hay/Pasture	7.2	1.2%
All other land uses	1.7	0.3%
Total	**613.3**	**100.0%**

Farmsteads are sparsely scattered outside of the Project Area, generally situated near public roads. Based on review of available aerial photography, there are 11 residences (A-K) located on parcels adjacent to the Project Area.

Vegetation

According to the Minnesota Department of Natural Resource (MNDNR) Ecological Classification System (ECS), Oak savanna (222me) was the historic vegetative cover of the Project Area prior to agricultural land conversion in the late 1800's. With open tree canopies, oak savanna habitat typically includes a strong representation of native prairie grasses and forbs in the understory. Historically, the open character of the oak savanna's open character is maintained by frequent disturbance in the form of fire, and to a lesser degree grazing.

The existing vegetative land cover is primarily cultivated cropland. Secondary vegetative communities in the immediate area include the highway 50 right-of-way, smaller utility rights-of-way, farmsteads, and residential vegetated areas to the west in the Town of Adams. Tree cover occurs along the tributary stream courses, farmstead shelterbelts, and along unmaintained fencelines. The National Wetland Inventory (NWI) shows that the configuration of solar arrays within the project boundary will avoid wetlands.

Soils

A Project Geotechnical Engineering Report was completed in September 2020. The report describes the project site as being located in the Dissected Till Plains of Minnesota. The Dissected Till Plains of Minnesota are part of the Central Lowlands, a physiographic province of the United States, which extends from the Canadian Shield in Saskatchewan and central Minnesota southward and eastward to the Coastal Plains. The surface elevation at this site ranges

between 300 – 4000 meters (1,280 – 1,312 feet). The project site exhibits a nearly flat topography and is underlain by surficial glacial and post glacial alluvium deposits, glacial outwash, and till. These quaternary units overlay Devonian sedimentary rock.

The soils deposited in the area are characteristic of glacial and post glacial activity and are summarized in Table . Although the regional surficial soil type is dominated by glacial till, some of the site soils are silty sand which can contain varying amounts of gravel consistent with glacial and post glacial alluvium depositional environments. The origin of the soil types found in the region (predominantly clays), is related to sediment that glaciers accumulated, carried, and deposited. Soils on the site are classified as predominantly low to moderate for erodibility.

Soils, underlying bedrock formations and other geologic features were identified during desktop evaluations using applicable GIS layers. Adjacent to the northern portion of the Project Area, areas identified as high potential for karst feature development were identified. However, while the site is underlain by carbonate bedrock, the overlying glacial soils are relatively thick and provide risk mitigation from karst. No karst features in or near the Project Area were reported in the geotechnical report. Other susceptible geologic features, including sinkholes, shallow limestone formations, or unconfined/shallow aquifers are not present in the vicinity of the Project Area. The underlying bedrock is at varying depths across the site but may be encountered at shallow depths especially in the western edge of the site (Mossler, 1998).

The soils at the Project location as identified in the field during the geotechnical investigations consist of topsoil overlying primarily lean clay with varying amounts of sand and gravel (glacial till). Deposits of silty to clayey sand were encountered across the site and were typically observed to be layers or pockets on the order of several feet thick. At isolated locations, the sand and gravel deposits were tens of feet thick. Occasional cobbles and boulders were also encountered when drilling in the glacial till deposits.

Soils listed as predominantly hydric or all hydric are scattered throughout the Project location. Wetlands are associated with some of these areas, however other areas appear to be effectively drained by agricultural practices. There are no known springs or seeps at the site. Soil maps are available in the Louise Solar Site Permit Application (SPA).

Table 2. Project Area soils. Yellow highlighted, 10+ acres within Project Area.

Map Unit	Soil Name	Acres	Drainage Class	Hydric Soil Status	Wind Erodibility Group
1030	Pits, sand and gravel	4.2	Excessively drained	Non-hydric	Low Erodibility
1078	Anthroportic Udorthents, 2 to 9 percent slopes	0.8	Moderately well drained	Non-hydric	Moderate Erodibility
135	Donnan silt loam	6.2	Somewhat poorly drained	Predominantly Non-hydric	High Erodibility
1841	Hayfield loam, loamy substratum	1	Somewhat poorly drained	Non-hydric	Low Erodibility
1884	Stateline silt loam	13.7	Poorly drained	Predominantly Hydric	Moderate Erodibility
190	Hayfield loam	6.2	Somewhat poorly drained	Predominantly Non-hydric	Moderate Erodibility
1904	Udolpho silt loam, loamy substratum	6.6	Poorly drained	Predominantly Hydric	Moderate Erodibility
1974	Coland, frequently flooded-Spillville, occasionally flooded complex, 0 to 2 percent slopes	1.4	Poorly drained	Partially Hydric	Moderate Erodibility
23	Skyberg silt loam, 0 to 3 percent slopes	117.1	Somewhat poorly drained	Predominantly Non-hydric	Moderate Erodibility
244A	Lilah sandy loam, 0 to 2 percent slopes	8.4	Excessively drained	Predominantly Non-hydric	Low Erodibility
244B	Lilah sandy loam, 2 to 6 percent slopes	2.1	Excessively drained	Non-hydric	Moderate Erodibility
24B	Kasson silt loam, 1 to 4 percent slopes	4.4	Moderately well drained	Predominantly Non-hydric	High Erodibility
2A	Ostrander loam, 0 to 2 percent slopes	6.9	Well drained	Non-hydric	Moderate Erodibility
2B	Ostrander loam, 2 to 5 percent slopes	7.5	Well drained	Non-hydric	Moderate Erodibility
307	Sargeant silt loam	8.1	Poorly drained	Predominantly Hydric	High Erodibility
334B	Vlasaty silt loam, 1 to 4 percent slopes	4.4	Moderately well drained	Predominantly Non-hydric	Moderate Erodibility
479	Floyd silt loam, 1 to 4 percent slopes	21.6	Somewhat poorly drained	Predominantly Non-hydric	Moderate Erodibility
483B	Waukee loam, 2 to 5 percent slopes	11.9	Well drained	Non-hydric	Moderate Erodibility
485	Lawler silt loam	28.2	Somewhat poorly drained	Predominantly Non-hydric	Low Erodibility
516B	Dowagiac loam, 2 to 6 percent slopes	4.8	Well drained	Predominantly Non-hydric	Low Erodibility
517	Shandep clay loam	0.1	Very poorly drained	All Hydric	Low Erodibility
631	Oran silt loam, 1 to 4 percent slopes	44.6	Somewhat poorly drained	Predominantly Non-hydric	High Erodibility
634	Protivin silt loam	91.3	Somewhat poorly drained	Non-hydric	Moderate Erodibility
79B	Billett fine sandy loam, 2 to 6 percent slopes	6.9	Well drained	Predominantly Non-hydric	Low Erodibility
88	Clyde silty clay loam, 0 to 3 percent slopes	33.1	Poorly drained	Predominantly Hydric	High Erodibility
M511A	Readlyn silt loam, 1 to 3 percent slopes	33.1	Somewhat poorly drained	Predominantly Non-hydric	Moderate Erodibility
M515A	Tripoli clay loam, 0 to 2 percent slopes	138.8	Poorly drained	Predominantly Hydric	Moderate Erodibility

Prime Farmland

Nearly all of the Project Area is located on prime farmland/prime farmland if drained (Table). Approximately 140 acres of prime farmland and 163 acres of prime farmland if drained are located within the Preliminary Development Area. These acreages of prime farmland will be utilized for solar production and beneficial, native habitat during the life of the Project but would not be permanently removed from agricultural production.

Table 3. Prime Farmland located in the Preliminary Development Area.

Farmland Classification	Area (Acreage)	Percent of Preliminary Development Area
Prime Farmland	149.2	46
Prime Farmland if Drained	165.1	50.9
Not Prime Farmland	10.3	3.2
TOTAL	**324.6**	**100**

Topography

The Project Area is relatively flat with elevation ranging between 300 to 400 meters (1,280 – 1,312 feet). The Project Area located to the north of Highway 56 slopes downward towards the tributary stream located immediately to the northwest. The south Project Area is relatively level with drainage affected by microtopographic variation. Existing two-foot contours are shown in **Figure 2**.

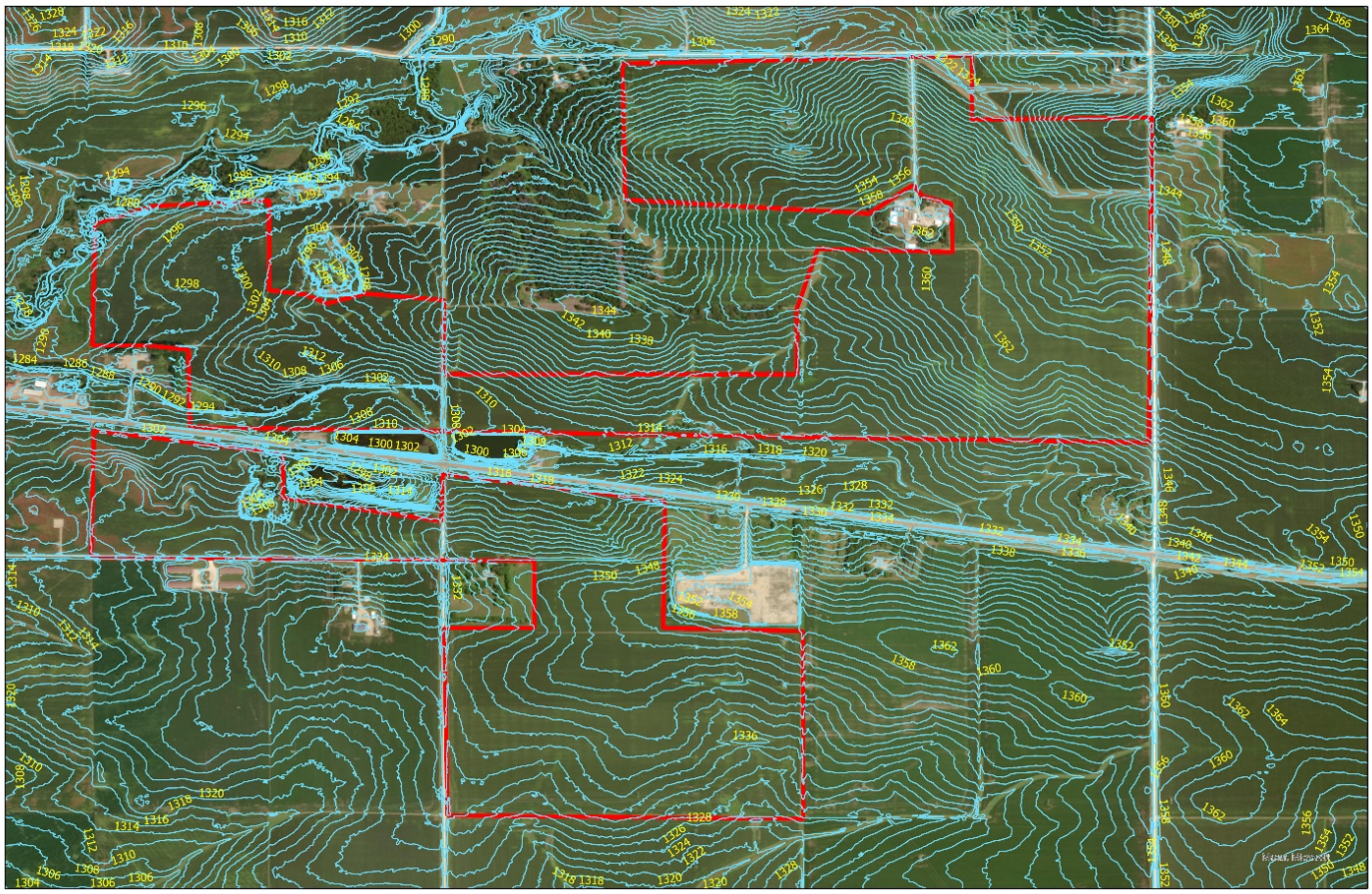

Figure 2. Project Area topography showing two foot contours.

Hydrology

The Project is located in the Cedar River Watershed Basin (MNDNR, 2019b). One unnamed MNDNR Public Watercourse is located in the northwest corner of the Project Area. It is classified as a natural perennial watercourse. This feature is also indicated as a Flowline in the National Hydrography Dataset (NHD). This stream likely tributaries to the Little Cedar River, located west of the Project. A total of 4 NHD flowlines and 4 NHD waterbodies intersect the Project Area. No other rivers, streams or lakes are mapped within the Solar Project Area.

A wetland delineation and jurisdictional waters field assessment was completed in November of 2020 and approved by the Technical Evaluation Panel in the spring of 2021. Eleven wetlands (Table 3) and three watercourses (Table 4) were delineated and mapped within the Project Area and the immediate vicinity. Delineated wetlands and watercourses are shown on **Figure 3.** See the SPA for more information on wetland impact avoidance and minimization measures

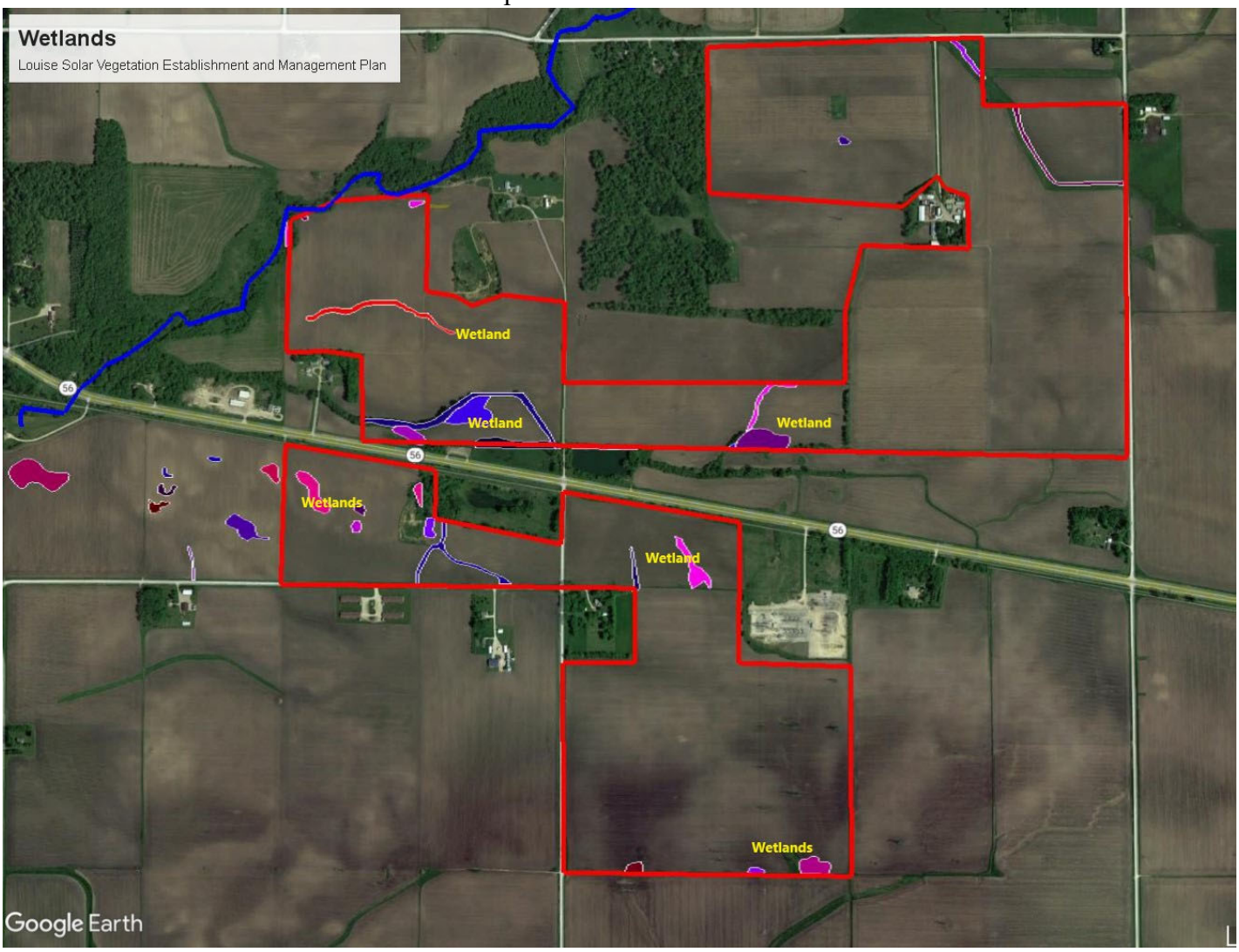

Figure 3. Wetlands and waterbodies located in the Project Area.

Wetland and waterbody types and acreages are summarized in **Table 4** and **Table 5** respectively.

Table 4. Delineated wetlands within and immediately adjacent to the Project Area.

Wetland Type	Wetlands within Project Area
Type 6/PSS1 Shrub-carr	4.19 acres
Type 2/PEMA Wet-meadow	0.83 acres
Type 3/PEMA Seasonally flooded basin	0.41 acres
Type 7/PFO1A Floodplain forest	0.40 acres
Type 5/PUBFx Shallow open water	0.37 acres
Total	6.2 acres

Table 5. Delineated watercourses within the Project Area.

Watercourse ID	Field Delineated Watercourse Type	Watercourse Size	Mapped Type
WC-01	Ephemeral	0.23 acres	R4SBC
WC-02	Intermittent	1.34 acres	R4SBC
WC-03	Perennial	0.27 acres	R2UBH

Drain Tile

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. Louise Solar will review available drain tile maps from participating landowners in the Project associated with the Project Area. Louise 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 Louise 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 Louise 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.

Louise Solar's design minimizes conflicts between known tile and the solar racking systems to minimize damage to tile to the extent feasible. In some areas, re-routing of the tile is necessary and this re-routing work will take place immediately prior to or during construction. Additional tile may be installed prior to or during construction to augment the existing system and to maintain the drainage profile of the site.

Following completion of construction, Louise 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, the Tile Contractor will be reengaged to pin-point damaged tile that may have been missed during construction. Tile would be repaired following the process outlined above.

Vegetation Management Units (or Areas)

At least three management units are expected within the Project Area as follows:

- Array Vegetation Management Unit
- Perimeter Vegetation Management Unit
- Stormwater Retention Vegetation Management Unit

The arrays are grouped by area as shown in **Figure 4** and in the subsequent figures 5 through 9.

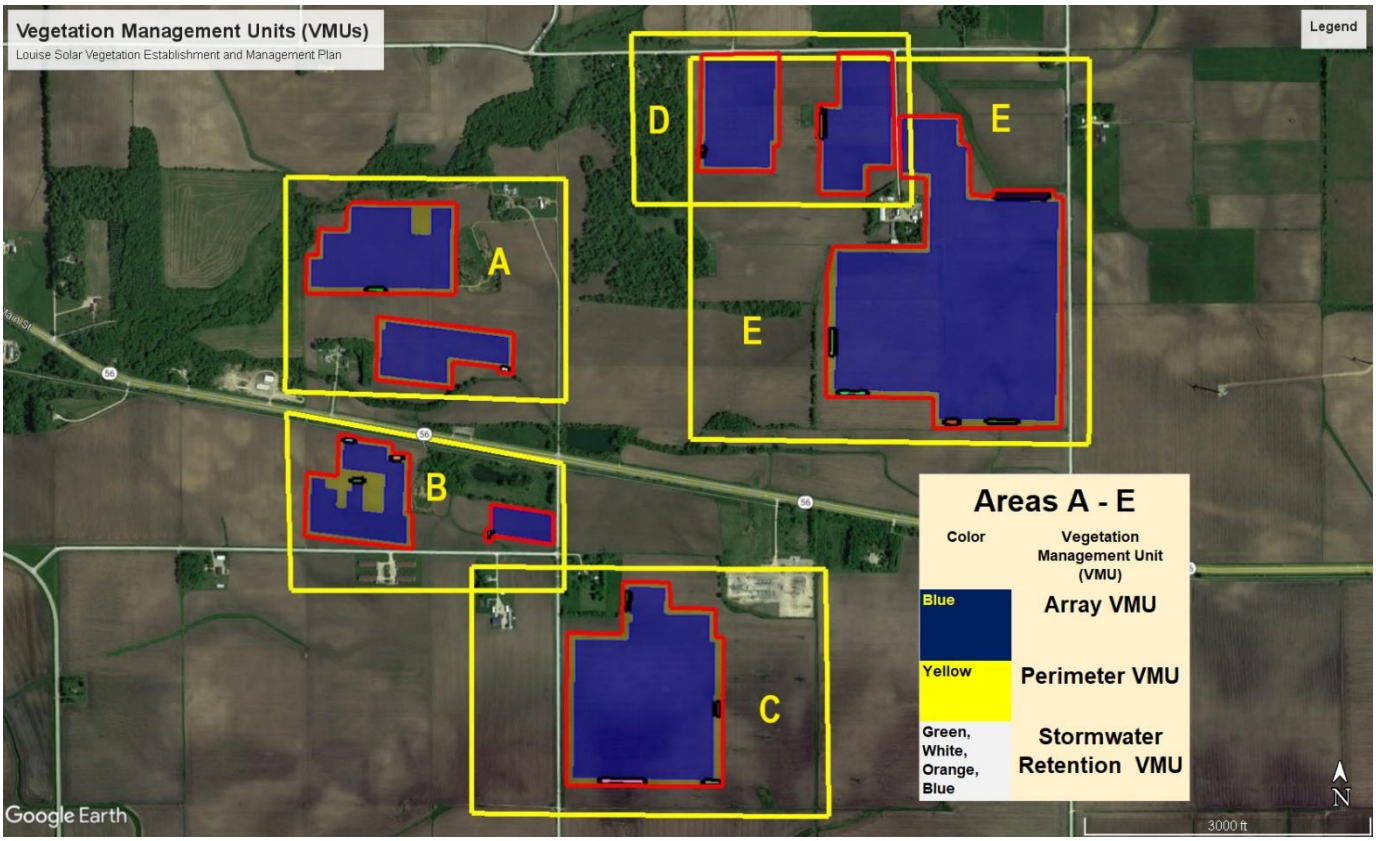

Figure 4. Plan view showing Vegetation Management Units. Nearer views of Areas A – E are shown on Figures 5 - 9.

Three Vegetation Management Units (VMUs) are shown in the figures. The Array VMUs shown in blue are based on the siting of the solar array units by the civil plans shown in the Site Permit Application. The Perimeter and Stormwater Retention VMUs are conceptually shown in the following figures.

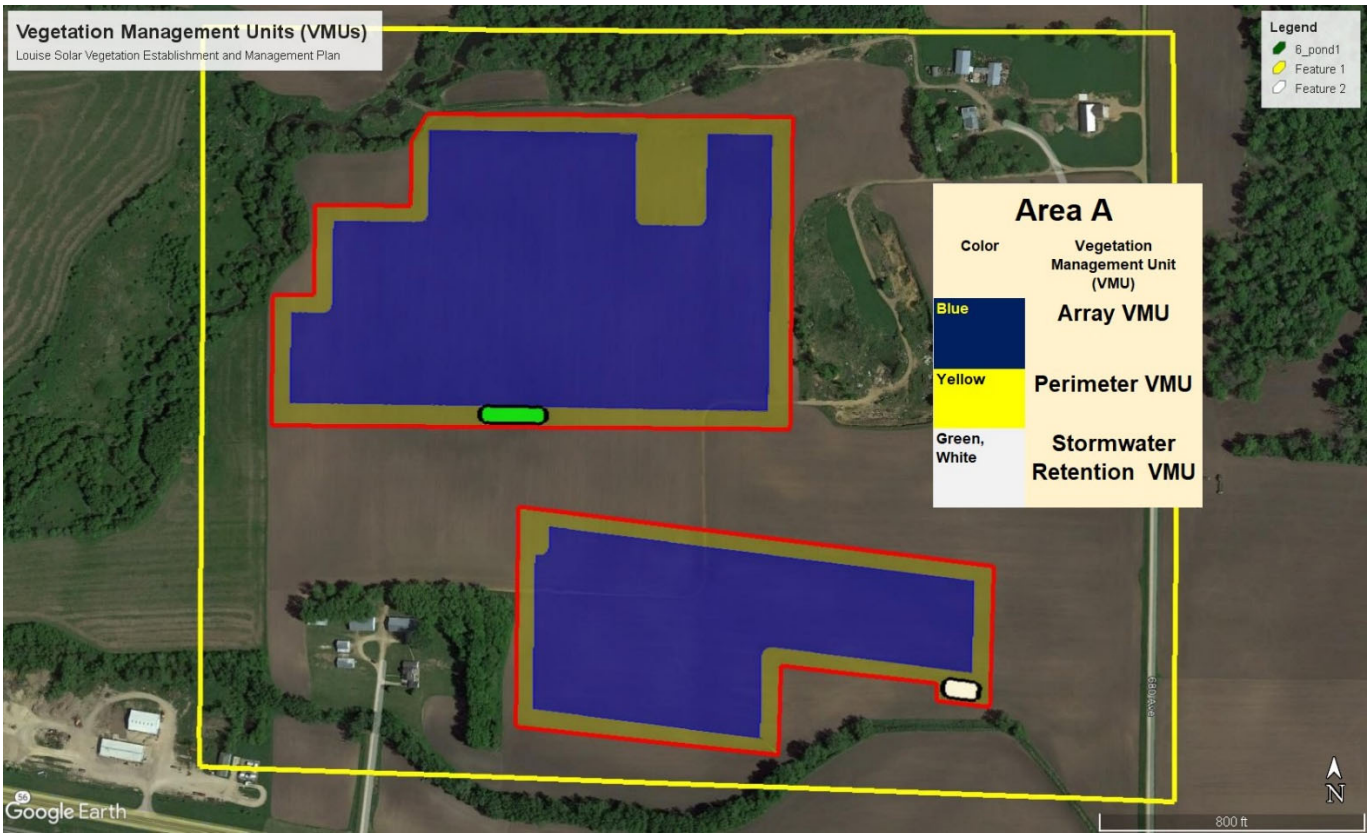

Figure 5. Vegetation Management Units in Area A arrays, Louise Solar Site.

Topographic contours were used to site the stormwater retention basins and drainages. The perimeter is defined as the area inside the fencing averaging 24 feet distance from the fence to the solar array panel edges. As fencing and stormwater basins are conceptually shown, they are subject to change.

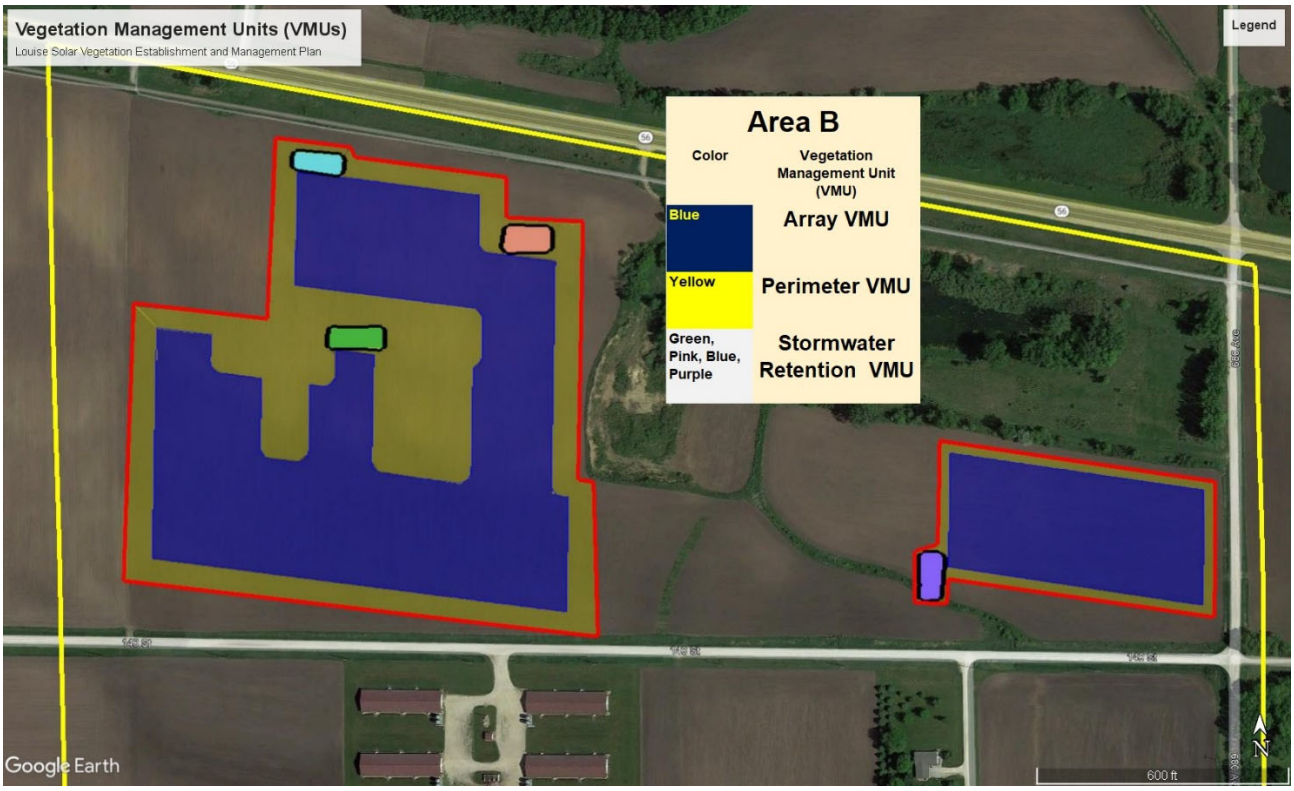

Figure 6. Vegetation Management Units in Area B arrays, Louise Solar Site.

Figure 7. Vegetation Management Units in Area C arrays, Louise Solar Site.

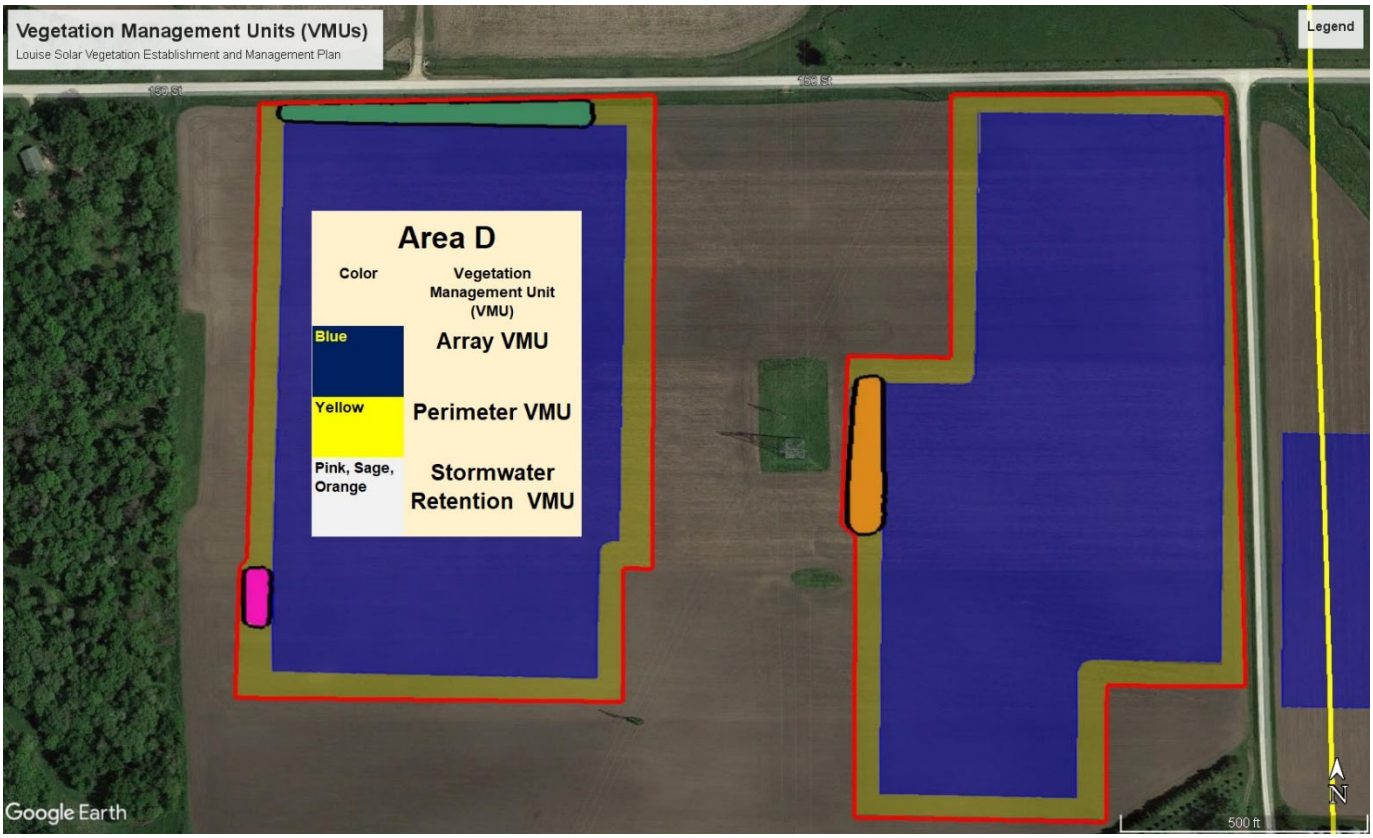

Figure 8. Vegetation Management Units in Area D arrays, Louise Solar Site.

Figure 9. Vegetation Management Units in Area E arrays, Louise Solar Site.

Array Vegetation Management Unit

The largest Vegetation Management Unit (VMU) will be the vegetation established in the solar panel mounted arrays and access roads within the fencing, designated as the Array VMU. Array VMU seed mix installations will be contingent on soil wetness, as well as vegetation growth form characteristics (i.e. height). The following Minnesota State Seed Mixes (formerly BWSR/MnDOT mixes) will be considered for installation in the Array VMU:

- Dry Prairie General (Mix 35-221)
- Mesic Prairie General (35-241)
- Mesic Prairie Southeast (35-641)
- Low Growing Solar Array South and West (Pilot Mix)

Depending on the amount of direct sunlight at a given spot, some of these mixes may be modified with a higher proportion of shade tolerant species.

Perimeter Vegetation Management Unit

The Perimeter VMU will encompass the perimeter areas located inside the fencing of the solar arrays. Like the Array VMU, the perimeter areas inside the fencing could include the following seed mixes:

- Dry Prairie General (Mix 35-221)
- Mesic Prairie General (35-241)
- Mesic Prairie Southeast (35-641)
- Low Growing Solar Array South and West (Pilot Mix)

Stormwater Retention Vegetation Management Unit

The Stormwater Retention VMU will address the stormwater retention basins located inside the fencing which are expected to be dry infiltration basins. The Dry Swale/Pond (33-262) seed mix will be installed in dry infiltration basins. If stormwater basins require a more wet tolerant mix, the Stormwater South and West (33-261), Wet Meadow South and West (34-271), and Wet Prairie (34-262) seed mixes could be considered.

Areas immediately located outside of the fencing will be planted with the same seed mixes as the Array VMU to buffer weed and woody species encroachment inside of the array fencing.

Management of the Array and Stormwater Basin VMU's will be achieved using integrated site management that could include:

- Mowing and haying.
- Spot herbicide applications.

Management of seeded areas of the perimeter fencing could also include mowing and herbicides.

Vegetation Management Objectives

The long-term Project vegetation establishment and management goals and objectives are as follows:

- Establish and create pollinator habitat using native species across all VMUs.
- Improve water infiltration and uptake through evapotranspiration.
- Successfully implement establishment and long-term management using mowing, herbicides, treatment of encroaching woody vegetation, and other adaptive approaches.
- All VMU's will be subject to adaptive management to maximize establishment success.
- The level of effort for monitoring is anticipated to include maintenance inspections using qualitative assessment methods.

Short Term Objectives (Establishment through year 5)

The short-term Project vegetation establishment and management goals and objectives are as follows:

1. Cover crops will provide immediate soil stabilization and provide protective cover for establishing planted seed.
2. Mowing and haying may be used as an establishment management method, as well as a weed control option.
3. Spot herbicide applications will be used to control weeds and woody species encroachment.
4. Broadcast seeding will be used for supplemental seeding of bare areas and areas not meeting performance criteria.
5. Annual monitoring followed with establishment maintenance activities will be conducted during the first five years of the project after seeding/planting. The monitoring analyses will be based on target goals and performance criteria including percent cover, composition of forbs and grasses, flowering periods, and seasonality.
6. All VMU's will be subject to adaptive management to maximize establishment success.

Establishment and Management Prescriptions

Site Preparation

Site preparation will be consistent with the Agricultural Impact Mitigation Plan (AIMP - Westwood, 2021) provided in the Solar Permit Application (SPA). This includes referencing the site conditions related to soils, drainage, and existing agricultural land uses as well as the construction sections of the AIMP. The AIMP construction sections address site clearing and vegetation removal, earthwork, and construction of roads, substation interconnection, solar arrays, and stormwater facilities. The AIMP summarizes planned construction activities, equipment, standards and practices, and adaptive methods related to site development.

Schedule and sequencing the installation of native vegetation will be addressed in this Plan using a Gantt Chart prepared after completion of the construction schedule. The chart will incorporate the AIMP and construction activities to provide a detailed vegetation installation timeline, milestones and dates, and coordination points with the construction contractor. Vegetation installation activities will be timed and sequenced with the construction schedule to ensure that site preparation and seeding activities occur at the appropriate times and steps in coordination with the construction contractor.

Soil and subsoil handling best management practices (BMPs) will be implemented during grading and trenching. This could include separating and temporarily stockpiling excavated or cut topsoil. Followed with reapplication of topsoil prior to seeding. Other BMPs could include temporary erosion control measures such as:

- Stockpiling and separating subsoils.
- Temporary cover crops.
- Erosion control blankets in sensitive areas.
- Silt fencing installations.
- Temporary drainages, checks, and runoff diversions.

Soil compaction will be prevented by utilizing construction BMPs that reduce compaction and mechanically treat any soils compacted during construction. Soil decompaction will occur prior to seed installation using soil decompaction ripper or tiller equipment. Soil compaction will be measured before and after decompaction treatment for quality control purposes prior to seed installation. The threshold for the need for soil decompaction is a maximum of 200 pounds per square inch (psi) in the upper 12 inches of soil.

Seedbed preparation will follow soil decompaction by first subjecting the soils to a roller or a disc to level the soil surface. The seed will then be installed using a seed drill.

Weeds that invade during construction will be subjected to spot herbicide treatments using an adaptive management approach contingency. Otherwise, seed installation should immediately follow soil decompaction and roller discing so the cover crop can quickly establish to minimize weed infestation.

All seed mixes will include a rapidly establishing temporary cover crop, such oats, annual rye, or a mixture of annual grasses. Selection of cover crop seed will be dependent on seasonal timing, weather conditions, and construction schedule to maximize effectiveness. For example, oats perform better as a cover crop when planted in the spring and early summer. Whereas annual rye is better suited for late summer through early winter plantings.

In accordance with state law, all equipment will be washed prior to entering and exiting the construction site. Washing stations will be identified in the final construction plans and will be the responsibility of the construction contractor(s).

Seeding and Planting

The following ***seed mixes*** will be considered for Project installation.

- Dry Prairie General (Mix 35-221)
- Mesic Prairie General (35-241)
- Mesic Prairie Southeast (35-641)
- Low Growing Solar Array South and West (Pilot Mix)
- Dry Swale/Pond (33-262)
- Stormwater South and West (33-261)
- Wet Meadow South and West (34-271)
- Wet Prairie (34-262)

Seed mixes will include the following specifications:

- At least 40 percent of the seed mix species will be comprised of 20 or more perennial forbs.
    - At least three forb species that bloom in each bloom period; Early (April-May), Mid (June-August), and Late (August-October).
- Seven or more species of grasses/sedges with a minimum of two bunchgrass species.
- Seed mixes will fulfill the various plant guilds: cool season grasses; warm-season grasses; sedges/rushes; legume; and non-legume forbs.
- Include a wide representation of plant families.
- Applied at a minimum rate of 40 pounds per acre or greater.
- Could include customization of mixes favoring shorter stature growing plants that won't hinder solar operations.

Typically, seed mixes are "over-specified" with an abundance of species that enable these criteria to be easily met. This includes using application rates that are slightly higher than 40 percent.

Seed mix species specification sheets are provided in the Attachments section of this document. ***Note that these mixes could be revised and potentially customized after completion of the grading and final design plans***. Based on seasonality, availability and costs seed mixes could also be subject to species substitutions. This will result in site specific seed mixes that meet the goals and objectives. See the Attachments for seed mix specifications.

Pesticide drift will also be addressed in greater detail when final design plans are completed. Pesticide drift management will address prevailing wind direction, topography, orientation, and array positioning. Drift minimization could include screening with evergreen trees or shrubs, establishing buffers and setbacks, and, most important and effective by communicating with neighboring landowners and farmers. Ultimately, protecting the native vegetation at Louise Solar from pesticide drift will depend on applicators on adjacent land properly controlling their pesticide application and preventing pesticide from drifting into the project area.

Array and border area planting timing will be contingent on the completion of site grading, trenching, and installation of the panel mounting equipment. In general, seeding can occur during any time of the year with the exception of winter months when soils are frozen. Optimal times include early summer (early June) when soil temperatures are warm for rapid seed germination, or in the fall (September – early November) prior to freeze up. Seed installed in the fall will be subjected to winter dormancy curing. Seed installed in the spring will be subjected to winter dormancy by the retail seed provider. All seed mixes will include a temporary cover crop to stabilize soils and provide protection for the young native plants to become established.

The arrays will be seeded using a seed drill implement. Seed drilling can either occur prior to or after the installation of the solar array equipment. A follow-up broadcast seeding event typically occurs later in the season to distribute seed to areas disturbed by construction and other activities. Seeded areas will be immediately followed with the installation of straw mulching using a mulch blower implement.

Stormwater detention area planting will be contingent on stormwater detention area design specifications. These specifications will include recommended plant materials, seeding rates/metrics, and installation methods.

Establishment Management and Maintenance

Vegetation establishment management and maintenance will follow an integrated approach. The five-year post installation establishment period will include establishment mowing events. Timed appropriately to manage weeds and promote native plant establishment. Mowing will be implemented using an adaptive schedule, meaning that mowing will be done on an as needed verses as scheduled basis. Haying can occur during the establishment and management periods as a means to remove mowed vegetation to avoid smothering native vegetation and prevent weed infestations.

Mowing is also an effective weed and woody species control measures. Woody species will be controlled using spot herbicide treatments including and target spectrum herbicides (e.g. woody species herbicide). Spot herbicide treatments can also be used to control herbaceous weeds using a broad or narrow spectrum herbicide.

Vegetation management equipment and implements will be cleaned of potential weed and invasive species reproductive parts prior to entering the Project Area. Similarly, equipment will be cleaned after all work events in the Project Area. Cleaning can either occur off-site at a designed cleaning station or facility, or a cleaning station constructed in the Project Area. Cleaned equipment should always be inspected to ensure removal of all vegetative matter.

Vegetation Monitoring and Adaptive Management

Monitoring is sub-divided into "construction monitoring" and "establishment management monitoring." While the details of monitoring will be contingent on the conditions set forth by the Minnesota Public Utilities Commission (PUC) permit approval and an Agricultural Impact Mitigation Plan, a general prescription of the assumed monitoring plan is as follows.

Vegetation will be monitored annually during the five-year establishment period. A monitoring plan will be prepared with projected outcomes and performance metrics. Annual monitoring will use quantitative and qualitative methods to measure and assess vegetation establishment progress. Monitoring will also identify maintenance and management needs for follow-up resolution. Quantitative approaches include using releve plot transect sampling in permanent or randomly selected locations in the Project Area. Qualitative methods include visually determining aerial cover, evaluating plant vigor or stress, identification of bare spots and weeds, and other non-parametric approaches. Permanent photo-stations will be established to show progress over time.

Annual monitoring will include a minimum of two field monitoring events, in June and September. Each monitoring event will be followed with a set of maintenance and management recommendations for follow-up action. Records of all maintenance and management actions will be saved and included in an Annual Monitoring Report completed after the September monitoring event by January 31 of following year. The Report will address adaptive management strategies and applications, vegetation performance, and management results. The contents and reporting metrics will be based on projected outcomes and related PUC permit conditions.

Annual Reporting

An annual report will be submitted by January 31 each year describing the following:

1. A summary of site conditions and management activities to meet management objectives by management area/unit.
2. Description of adaptive management actions implemented to meet management objectives.
3. Description of management challenges (unanticipated weather events, staffing, etc.).
4. Discussion of specific management challenges faced by the project during the reporting year.
5. Updates to this Vegetation Management Plan, if any, and a summary of related agency coordination.

References

Westwood, 2021. Application to the Minnesota Public Utilities Commission for a Site Permit for the 50 MW Louise Solar Large Electric Generating Facility. MPUC Docket Number: IP-7039/WS-20-647. February 11, 2021.

Westwood, 2021. Agricultural Impact Mitigation Plan for the Louise Solar Site. Appendix C of the Louise Solar Permit Application. February 2, 2021.

Attachments

Seed Mix Specification Sheets

Mesic Prairie General 35-241

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	2.24	2.00	5.48%	7.35
side-oats grama	*Bouteloua curtipendula*	1.79	1.60	4.39%	3.53
kalm's brome	*Bromus kalmii*	0.56	0.50	1.37%	1.47
nodding wild rye	*Elymus canadensis*	1.31	1.17	3.20%	2.23
slender wheatgrass	*Elymus trachycaulus*	1.12	1.00	2.73%	2.53
switchgrass	*Panicum virgatum*	0.07	0.06	0.17%	0.32
little bluestem	*Schizachyrium scoparium*	1.79	1.60	4.39%	8.82
Indian grass	*Sorghastrum nutans*	2.24	2.00	5.48%	8.82
prairie dropseed	*Sporobolus heterolepis*	0.08	0.07	0.18%	0.39
Total Grasses	**11.21**	**10.00**	**27.39%**	**35.46**	
blue giant hyssop	*Agastache foeniculum*	0.07	0.06	0.15%	1.82
lead plant	*Amorpha canescens*	0.07	0.06	0.15%	0.25
common milkweed	*Asclepias syriaca*	0.04	0.04	0.10%	0.06
butterfly milkweed	*Asclepias tuberosa*	0.04	0.04	0.10%	0.06
Canada milk vetch	*Astragalus canadensis*	0.07	0.06	0.17%	0.39
white prairie clover	*Dalea candida*	0.07	0.06	0.17%	0.44
purple prairie clover	*Dalea purpurea*	0.21	0.19	0.51%	1.03
Canada tick trefoil	*Desmodium canadense*	0.07	0.06	0.18%	0.13
stiff sunflower	*Helianthus pauciflorus*	0.07	0.06	0.17%	0.09
ox-eye	*Heliopsis helianthoides*	0.15	0.13	0.34%	0.29
rough blazing star	*Liatris aspera*	0.03	0.03	0.08%	0.18
great blazing star	*Liatris pycnostachya*	0.03	0.03	0.09%	0.13
wild bergamot	*Monarda fistulosa*	0.07	0.06	0.17%	1.61
stiff goldenrod	*Oligoneuron rigidum*	0.07	0.06	0.17%	0.94
black-eyed susan	*Rudbeckia hirta*	0.35	0.31	0.86%	10.56
heath aster	*Symphyotrichum ericoides*	0.03	0.03	0.09%	2.30
smooth aster	*Symphyotrichum laeve*	0.07	0.06	0.17%	1.26
blue vervain	*Verbena hastata*	0.04	0.04	0.12%	1.50
hoary vervain	*Verbena stricta*	0.07	0.06	0.17%	0.64

golden alexanders	*Zizia aurea*	0.07		0.06	0.15%	0.23
Total Forbs	**1.68**		**1.50**	**4.11%**		**23.89**
Oats	*Avena sativa*	28.02		25.00	68.50%	11.14
Total Cover Crop	**28.02**		**25.00**	**68.50%**		**11.14**
Totals:	**40.91**		**36.50**	**100.00%**		**70.49**
Purpose:				General mesic prairie mix for native roadsides, ecological restoration, or conservation program plantings.		
Planting Area:				Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.		

Dry Prairie General

35-221

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	0.78	0.70	1.92%	2.57
side-oats grama	*Bouteloua curtipendula*	3.36	3.00	8.22%	6.61
blue grama	*Bouteloua gracilis*	0.56	0.50	1.37%	7.35
kalm's brome	*Bromus kalmii*	0.82	0.73	2.00%	2.14
nodding wild rye	*Elymus canadensis*	1.12	1.00	2.74%	1.91
junegrass	*Koeleria macrantha*	0.28	0.25	0.69%	18.37
little bluestem	*Schizachyrium scoparium*	3.36	3.00	8.22%	16.53
Indian grass	*Sorghastrum nutans*	0.78	0.70	1.92%	3.09
prairie dropseed	*Sporobolus heterolepis*	0.13	0.12	0.34%	0.73
	Total Grasses	**11.21**	**10.00**	**27.42%**	**59.30**
blue giant hyssop	*Agastache foeniculum*	0.07	0.06	0.17%	2.07
lead plant	*Amorpha canescens*	0.10	0.09	0.26%	0.42
butterfly milkweed	*Asclepias tuberosa*	0.07	0.06	0.17%	0.10
Canada milk vetch	*Astragalus canadensis*	0.07	0.06	0.18%	0.40
bird's foot coreopsis	*Coreopsis palmata*	0.07	0.06	0.16%	0.21
white prairie clover	*Dalea candida*	0.07	0.06	0.15%	0.39
purple prairie clover	*Dalea purpurea*	0.21	0.19	0.51%	1.02
Canada tick trefoil	*Desmodium canadense*	0.07	0.06	0.18%	0.13
stiff sunflower	*Helianthus pauciflorus*	0.07	0.06	0.17%	0.09
rough blazing star	*Liatris aspera*	0.04	0.04	0.12%	0.25
wild bergamot	*Monarda fistulosa*	0.07	0.06	0.15%	1.42
stiff goldenrod	*Oligoneuron rigidum*	0.07	0.06	0.15%	0.83
large-flowered beard tongue	*Penstemon grandiflorus*	0.07	0.06	0.17%	0.32
black-eyed susan	*Rudbeckia hirta*	0.35	0.31	0.84%	10.32
gray goldenrod	*Solidago nemoralis*	0.04	0.04	0.10%	3.86
heath aster	*Symphyotrichum ericoides*	0.04	0.04	0.10%	2.58
smooth aster	*Symphyotrichum laeve*	0.07	0.06	0.17%	1.26
hoary vervain	*Verbena stricta*	0.15	0.13	0.34%	1.29
	Total Forbs	**1.68**	**1.50**	**4.09%**	**26.96**
Oats	*Avena sativa*	28.02	25.00	68.49%	11.13
	Total Cover Crop	**28.02**	**25.00**	**68.49%**	**11.13**
	Totals:	**40.91**	**36.50**	**100.00%**	**97.39**
Purpose:	General dry prairie mix for native roadsides, ecological restoration, or conservation program plantings.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

Dry Swale/Pond

33-262

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	1.68	1.50	3.40%	5.50
American slough grass	*Beckmannia syzigachne*	1.68	1.50	3.42%	27.60
fringed brome	*Bromus ciliatus*	1.68	1.50	3.40%	6.05
nodding wild rye	*Elymus canadensis*	4.48	4.00	9.09%	7.64
slender wheatgrass	*Elymus trachycaulus*	4.48	4.00	9.10%	10.15
Virginia wild rye	*Elymus virginicus*	2.80	2.50	5.67%	3.85
switchgrass	*Panicum virgatum*	0.45	0.40	0.91%	2.05
fowl bluegrass	*Poa palustris*	1.79	1.60	3.64%	76.50
Indian grass	*Sorghastrum nutans*	1.68	1.50	3.40%	6.60
	Total Grasses	**20.74**	**18.50**	**42.03%**	**145.94**
marsh milkweed	*Asclepias incarnata*	0.07	0.06	0.13%	0.10
purple prairie clover	*Dalea purpurea*	0.10	0.09	0.21%	0.50
Canada tick trefoil	*Desmodium canadense*	0.10	0.09	0.21%	0.19
ox-eye	*Heliopsis helianthoides*	0.10	0.09	0.20%	0.20
black-eyed susan	*Rudbeckia hirta*	0.08	0.07	0.17%	2.49
blue vervain	*Verbena hastata*	0.11	0.10	0.23%	3.50
	Total Forbs	**0.56**	**0.50**	**1.15%**	**6.98**
Oats	*Avena sativa*	28.02	25.00	56.82%	11.14
	Total Cover Crop	**28.02**	**25.00**	**56.82%**	**11.14**
	Totals:	**49.32**	**44.00**	**100.00%**	**164.06**
Purpose:	Temporarily flooded swales in agricultural settings.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

Stormwater South and West

33-261

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	2.24	2.00	5.72%	7.35
fringed brome	*Bromus ciliatus*	2.24	2.00	5.73%	8.10
bluejoint	*Calamagrostis canadensis*	0.07	0.06	0.18%	6.40
slender wheatgrass	*Elymus trachycaulus*	1.12	1.00	2.85%	2.53
Virginia wild rye	*Elymus virginicus*	1.68	1.50	4.28%	2.31
switchgrass	*Panicum virgatum*	0.43	0.38	1.07%	1.93
fowl bluegrass	*Poa palustris*	1.19	1.06	3.03%	50.70
Indian grass	*Sorghastrum nutans*	0.13	0.12	0.36%	0.55
prairie cordgrass	*Spartina pectinata*	0.43	0.38	1.07%	0.91
	Total Grasses	**9.53**	**8.50**	**24.29%**	**80.78**
awl-fruited sedge	*Carex stipata*	0.28	0.25	0.71%	3.10
dark green bulrush	*Scirpus atrovirens*	0.21	0.19	0.54%	31.70
woolgrass	*Scirpus cyperinus*	0.07	0.06	0.18%	39.00
	Total Sedges and Rushes	**0.56**	**0.50**	**1.43%**	**73.80**
Canada anemone	*Anemone canadensis*	0.08	0.07	0.19%	0.20
marsh milkweed	*Asclepias incarnata*	0.12	0.11	0.32%	0.20
leafy beggarticks	*Bidens frondosa*	0.12	0.11	0.31%	0.20
flat-topped aster	*Doellingeria umbellata*	0.07	0.06	0.17%	1.50
spotted Joe pye weed	*Eutrochium maculatum*	0.07	0.06	0.18%	2.19
autumn sneezeweed	*Helenium autumnale*	0.15	0.13	0.36%	5.97
obedient plant	*Physostegia virginiana*	0.08	0.07	0.21%	0.30
tall coneflower	*Rudbeckia laciniata*	0.08	0.07	0.21%	0.37
New England aster	*Symphyotrichum novae-angliae*	0.08	0.07	0.19%	1.56
blue vervain	*Verbena hastata*	0.06	0.05	0.15%	1.85
golden alexanders	*Zizia aurea*	0.22	0.20	0.56%	0.79
	Total Forbs	**1.12**	**1.00**	**2.85%**	**15.13**
Oats	*Avena sativa*	28.02	25.00	71.43%	11.14
	Total Cover Crop	**28.02**	**25.00**	**71.43%**	**11.14**
	Totals:	**39.23**	**35.00**	**100.00%**	**180.85**
Purpose:	Stormwater pond edges, temporarily flooded dry ponds, and temporarily flooded ditch bottoms.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

Wet Meadow South and West

34-271

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
fringed brome	*Bromus ciliatus*	1.23	1.10	9.18%	4.45
bluejoint	*Calamagrostis canadensis*	0.06	0.05	0.41%	5.00
Virginia wild rye	*Elymus virginicus*	1.12	1.00	8.37%	1.55
rice cut grass	*Leersia oryzoides*	0.28	0.25	2.07%	3.10
tall manna grass	*Glyceria grandis*	0.17	0.15	1.26%	3.90
fowl manna grass	*Glyceria striata*	0.11	0.10	0.83%	3.30
fowl bluegrass	*Poa palustris*	0.39	0.35	2.88%	16.50
	Total Grasses	**3.36**	**3.00**	**25.00%**	**37.80**
bristly sedge	*Carex comosa*	0.24	0.21	1.78%	2.36
pointed broom sedge	*Carex scoparia*	0.06	0.05	0.43%	1.60
awl-fruited sedge	*Carex stipata*	0.19	0.17	1.40%	2.10
tussock sedge	*Carex stricta*	0.03	0.03	0.21%	0.50
fox sedge	*Carex vulpinoidea*	0.16	0.14	1.13%	5.00
path rush	*Juncus tenuis*	0.04	0.04	0.34%	15.00
dark green bulrush	*Scirpus atrovirens*	0.20	0.18	1.48%	30.00
woolgrass	*Scirpus cyperinus*	0.09	0.08	0.67%	50.00
	Total Sedges and Rushes	**1.01**	**0.90**	**7.44%**	**106.56**
marsh milkweed	*Asclepias incarnata*	0.27	0.24	2.03%	0.43
common boneset	*Eupatorium perfoliatum*	0.02	0.02	0.18%	1.30
grass-leaved goldenrod	*Euthamia graminifolia*	0.01	0.01	0.06%	1.00
spotted Joe pye weed	*Eutrochium maculatum*	0.02	0.02	0.18%	0.75
autumn sneezeweed	*Helenium autumnale*	0.03	0.03	0.23%	1.30
sawtooth sunflower	*Helianthus grosseserratus*	0.04	0.04	0.30%	0.20
great lobelia	*Lobelia siphilitica*	0.02	0.02	0.13%	2.90
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.07%	6.80
Virginia mountain mint	*Pycnanthemum virginianum*	0.07	0.06	0.53%	5.10
giant goldenrod	*Solidago gigantea*	0.02	0.02	0.14%	1.50
eastern panicled aster	*Symphyotrichum lanceolatum*	0.03	0.03	0.22%	1.50
red-stemmed aster	*Symphyotrichum puniceum*	0.19	0.17	1.42%	5.00
tall meadow-rue	*Thalictrum dasycarpum*	0.01	0.01	0.12%	0.11
blue vervain	*Verbena hastata*	0.15	0.13	1.12%	4.61
bunched ironweed	*Vernonia fasciculata*	0.03	0.03	0.28%	0.30
Culver's root	*Veronicastrum virginicum*	0.01	0.01	0.12%	4.20
golden alexanders	*Zizia aurea*	0.28	0.25	2.06%	1.00
	Total Forbs	**1.23**	**1.10**	**9.19%**	**38.00**
Oats	*Avena sativa*	7.85	7.00	58.37%	3.12
	Total Cover Crop	**7.85**	**7.00**	**58.37%**	**3.12**
	Totals:	**13.45**	**12.00**	**100.00%**	**185.48**
Purpose:	Wet meadow / Sedge meadow reconstruction for wetland mitigation or ecological restoration projects				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

BWSR DEPARTMENT OF TRANSPORTATION DEPARTMENT OF NATURAL RESOURCES

Wet Prairie

34-262

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	*Andropogon gerardii*	1.12	1.00	6.89%	3.67
fringed brome	*Bromus ciliatus*	1.68	1.50	10.38%	6.08
bluejoint	*Calamagrostis canadensis*	0.04	0.04	0.27%	4.00
Virginia wild rye	*Elymus virginicus*	1.96	1.75	12.07%	2.70
tall manna grass	*Glyceria grandis*	0.17	0.15	1.02%	3.80
fowl manna grass	*Glyceria striata*	0.12	0.11	0.73%	3.50
switchgrass	*Panicum virgatum*	0.84	0.75	5.16%	3.85
fowl bluegrass	*Poa palustris*	0.22	0.20	1.39%	9.60
Indian grass	*Sorghastrum nutans*	0.56	0.50	3.44%	2.20
prairie cordgrass	*Spartina pectinata*	0.56	0.50	3.41%	1.20
	Total Grasses	**7.29**	**6.50**	**44.76%**	**40.60**
wooly sedge	*Carex pellita*	0.06	0.05	0.32%	0.47
tussock sedge	*Carex stricta*	0.02	0.02	0.17%	0.48
fox sedge	*Carex vulpinoidea*	0.11	0.10	0.66%	3.50
dark green bulrush	*Scirpus atrovirens*	0.11	0.10	0.72%	17.74
woolgrass	*Scirpus cyperinus*	0.03	0.03	0.18%	16.00
	Total Sedges and Rushes	**0.34**	**0.30**	**2.05%**	**38.19**
Canada anemone	*Anemone canadensis*	0.03	0.03	0.21%	0.09
marsh milkweed	*Asclepias incarnata*	0.09	0.08	0.55%	0.14
Canada tick trefoil	*Desmodium canadense*	0.56	0.50	3.41%	1.00
flat-topped aster	*Doellingeria umbellata*	0.06	0.05	0.34%	1.20
common boneset	*Eupatorium perfoliatum*	0.03	0.03	0.23%	2.00
grass-leaved goldenrod	*Euthamia graminifolia*	0.02	0.02	0.11%	2.00
spotted Joe pye weed	*Eutrochium maculatum*	0.04	0.04	0.30%	1.50
autumn sneezeweed	*Helenium autumnale*	0.06	0.05	0.35%	2.39
sawtooth sunflower	*Helianthus grosseserratus*	0.06	0.05	0.38%	0.30
great blazing star	*Liatris pycnostachya*	0.02	0.02	0.17%	0.10
great lobelia	*Lobelia siphilitica*	0.01	0.01	0.05%	1.40
blue monkey flower	*Mimulus ringens*	0.01	0.01	0.05%	6.40
Virginia mountain mint	*Pycnanthemum virginianum*	0.09	0.08	0.55%	6.50
red-stemmed aster	*Symphyotrichum puniceum*	0.09	0.08	0.56%	2.40
blue vervain	*Verbena hastata*	0.17	0.15	1.06%	5.25
bunched ironweed	*Vernonia fasciculata*	0.03	0.03	0.23%	0.30
Culver's root	*Veronicastrum virginicum*	0.02	0.02	0.14%	6.00
golden alexanders	*Zizia aurea*	0.28	0.25	1.76%	1.03
	Total Forbs	**1.68**	**1.50**	**10.45%**	**40.00**
Oats	*Avena sativa*	6.95	6.20	42.74%	2.76
	Total Cover Crop	**6.95**	**6.20**	**42.74%**	**2.76**
	Totals:	**16.25**	**14.50**	**100.00%**	**121.55**
Purpose:	Wet prairie reconstruction for wetland mitigation or ecological restoration.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				