Vegetation Management Plan

Wood County Solar Project
Wood County, Wisconsin
PN: 193706930

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This document entitled Vegetation Management Plan was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Wood County Solar Project, LLC (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others.

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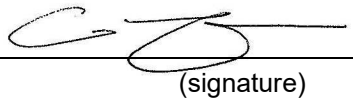
Reviewed by  _____
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Executive Summary

Wood County Solar Project, LLC (WCSP) is proposing a 149.76-megawatt (MW) alternating current (AC) photovoltaic (PV) solar project on approximately 1,880 acres of predominantly red pine (*Pinus resinosa*) plantations in the Town of Saratoga, Wood County, Wisconsin ("the Project"). A total of approximately 1,520 acres of land is being considered for potential placement of facilities, including primary and alternate arrays. If the primary array is ordered, the final footprint of facilities will be limited to approximately 1,208 acres. The Project includes a 138 kilovolt (kV) generation tie-in (gen-tie) line approximately 3.8 miles in length. The point of interconnection will be a new switchyard, constructed and owned by American Transmission Company (ATC), adjacent to an existing ATC 138 kV line.

WCSP has notified staff of the Wisconsin Department of Natural Resources (WDNR) and the Public Service Commission of Wisconsin (PSCW) of its intent to file for a Certificate of Public Convenience and Necessity for the Project. This vegetation management plan is provided for WDNR and PSCW review to address revegetation following construction and the creation of pollinator friendly habitat within select buffer areas around the solar arrays.

Stantec Consulting Services Inc. (Stantec) has worked with WCSP to create this Vegetation Management Plan. The intent of the plan is to guide the seed mix design, site preparation, seed installation, and 30-year maintenance plan of pollinator friendly and short-grass plantings associated with the Project.

1.0 PROJECT OVERVIEW

Wood County Solar Project, LLC (WCSP) is proposing the Wood County Solar Project (Project) in the Town of Saratoga, Wood County, Wisconsin. The Project is a 149.76-megawatt (MW) alternating current (AC) photovoltaic (PV) solar facility that includes solar array blocks containing PV panels attached to a single-axis tracking system mounted to steel piles. The PV panels will track the sun during the day. Direct current (DC) electricity from the PV panels will be routed underground through collection wiring to Power Conversion Units (PCUs) located throughout the PV array areas. Each PV array area will be fenced and have gated access at the road entrances. Constructed access roads will be gravel and approximately 12 to 20 feet wide. Construction of the Project is anticipated to begin in 2021 and be completed in September 2022.

The total Project Area is approximately 1,882 acres, but facilities for the final Project are expected to encompass approximately 1,208 acres of land (the Primary Facility Area). However, the total potential land being considered for the Project includes approximately 312 acres of additional alternate land for solar arrays (the Alternate Facility Area). For the purpose of this Vegetation Management Plan (Plan), Project Development Area will refer to only areas within the primary (1,208-acre) and alternate (312-acre) array fences. Areas that are disturbed for Project purposes will be re-vegetated per the Preliminary Erosion Control and Stormwater Management Plan (ECSWMP). This Plan supplements and does not replace the guidance provided in the ECSWMP.

The typical minimum leading-edge height between the PV panels and the ground is between 30 and 42 inches. Post-to-post spacing between rows is approximately 27 feet. Final spacing within the arrays will be determined once equipment selection is finalized and the detailed engineering plan is complete. The installation of low-growing plant species and performance of vegetation management practices within the PV panel areas will be conducted to minimize vegetation touching the panels.

The existing topography within the Project Area is relatively flat and minimal grading is anticipated to occur for Project installation. The Project Area is comprised of varying stands and age classes of red pine plantations, areas of natural dry-mesic to dry mixed coniferous-deciduous woodland, and large areas of cleared plantation that have revegetated as open, and upland grassland communities. Wetlands are present in the far northwest corner of the Project Area near Sevenmile Creek but will not be impacted by construction activities as they are not located within the Project Development Area.

Soils within the primary array areas are mapped by Natural Resource Conservation Service (NRCS) primarily as Plainfield Sand complex with 0-2%, 2-6%, and 6-12% slopes. This complex may contain loamy sand and sandy textures, is excessively drained, and is not considered prime farmland.

This proposed Plan is based on information to date and is subject to change based on final Project design and seed availability.

2.0 VEGETATION INSTALLATION

Specific goals of this Plan include guidance on the following:

- Maintaining compatibility and compliance with the Project preliminary ECSWMP;
- Maintaining compliance with PSCW requirements regarding revegetation after construction of the Project Area (limited to the area within and just outside the array fences);
- Maintaining soil health so that the land can be returned to productive land use after Project decommissioning;
- Managing populations of existing invasive species within the Project Development Area, as feasible, and reducing the spread of invasive species outside of the Project Area;
- Developing (?) a permanent seed mix design that supports the following goals:
    - Low growth, low maintenance, shade tolerant grasses for areas under panels and between panel rows; and
    - Pollinator friendly plantings in upland areas near the fence line and substation complex where there is adjacent existing habitat outside of the array fences.
- Preparing seed bed and seed installation methods for temporary and permanent seed; and
- Maintaining vegetation for the Project Development Area through the life of the facility.

2.1 SEEDING PLAN

The seeding plan for this Project includes temporary seed installation and permanent seed installation, as described in detail in the following sections.

2.1.1 Temporary Seed

Temporary seeding will be done to stabilize soils disturbed by Project construction or that have been removed from productive land use until permanent vegetation establishes to meet two primary objectives:

- Compliance with the ECSWMP.
- Enhancement of soil quality prior to installation of permanent seed mixes in the array areas. Annual grasses and legumes will be utilized together to stabilize soils, enhance soil organic matter, and add nitrogen. The specific species to install and the installation rate shall be selected based on the timing of installation and whether the temporary cover is being installed with or without permanent seed. Temporary cover installation rates are higher when the seed is not installed concurrently with permanent seed in order to provide adequate vegetative cover.

Temporary cover (crop) species are provided in Tables A.1-A through A.1-C (Appendix A).

2.1.1.1 Annual Grasses

Annual cereal grasses establish quickly, provide excellent erosion control, establish residue for later permanent seedings, build soil organic matter, and assist with weed suppression. Three annual grasses consisting of winter wheat (*Triticum aestivum*a; winter annual), seed oats (*Avena sativa*; a cool season annual), and annual rye (*Lolium multiflorum*; an annual) will be utilized, depending on installation timing. Each of these species is listed on the Wisconsin Department of Natural Resources (WDNR) Technical Standard 1059 – Seeding for Construction Site Erosion Control and has a relatively wide tolerance of soil conditions.

2.1.1.2 Legumes

Legumes add nitrogen to the soil which will assist with long-term establishment of permanent seed mixes. Legumes also assist with erosion control and weed suppression and provide flowers for pollinators. Two annual legumes consisting of Berseem clover (*Trifolium alexandrinum*; a summer annual) and crimson clover (*T. incarnatum*; a winter annual) will be utilized depending on installation timing. These two clover species are excellent nitrogen sources and are tolerant of sandy loam and sandy soils.

2.1.1.3 Solar Production Area

The solar production area, referred to as Area A, is comprised of the area under and between the PV panel arrays. Temporary seeding in this area will be completed in phases, starting concurrently with vegetation removal.

- Phase 1 – Late summer/fall 2021 (August-September) phased with active site preparation, vegetation removal, and soil management. The temporary fall cover crop seed mix (Table A.1-A) will be installed to establish vegetation cover that will overwinter and provide residue for additional temporary seeding in the 2022 growing season. Installation by drilling into exposed soils is preferred for seed establishment but may include broadcasting at high rates.

- Phase 2 – Spring 2022 (mid-April-September). The temporary spring-summer cover crop seed mix (Table A.1-B) will be installed across the entire site by broadcasting (interseeding) into winter wheat and crimson clover growth from fall 2021.

- Phase 3 – Spring-fall 2022 (mid-April-September). The aforementioned cover crop seed mixes (Tables A.1-A and A.1-B) will be installed, as needed, to revegetate areas disturbed by construction activities.

2.1.1.4 Pollinator Areas

Area B comprises designated areas that can be used for the establishment of native pollinator friendly vegetation. These locations will be determined after the final site design is complete but, in general, will be located in open blocks away from panels. As permanent native species will be planted that are tolerant of droughty, nutrient-poor sandy soils, these areas will be not seeded with a legume cover crop. Annual grasses (winter wheat, seed oats, and annual rye) will be selected for temporary cover based on installation timing and utilized to stabilize soils and provide residue for permanent seeding (Table A.1-C).

These areas should be seeded following vegetation removal and as needed thereafter to maintain vegetation cover throughout Project construction. This mix should also be used when native seed is installed.

2.1.2 Permanent Seed

Recent communications from the U.S. Fish and Wildlife Service (USFWS) indicated that pollinator friendly seed mixes have been difficult to establish at some other solar sites between the PV panels and recommended to incorporate any pollinator friendly seed mixes along the site perimeter or undeveloped portions of the Project Area. WCSP has incorporated the recommendations from the USFWS into the seeding plan for the Project.

Proposed Project seed mixes are provided in Appendix A, and a description of the mixes and installation location is provided below. Proposed seeding locations are dependent on the final design (e.g., distance between panels, fence placement).

Two permanent seed mixes were designed for the Project Area as follows:

1. Mixed Native and Non-Native Graminoid Seed Mix – Paneled Areas (Table A.2)
2. Upland Pollinator Friendly Seed Mix – Select Buffer Areas (Table A.3)

These mixes are described in more detail below.

2.1.2.1 Mixed Native and Non-Native Graminoid Seed Mix – Paneled Areas

This mix consists primarily of native perennial graminoids (non-flowering herbaceous species), specifically grasses, sedges, and rushes (Table A.2, Appendix A). The mix contains native bunch grasses and sedges to enhance soil health. The mix also includes non-native, perennial rye grass (*Lolium perenne*) to assist with revegetation. This species is not considered invasive or noxious under State of Wisconsin Noxious Weeds law (Chapter 66.0407) or the Wisconsin NR 40 Invasive Species Rule.

The seed mix is intended to provide permanent, low maintenance, low growth, shade and drought tolerant vegetative cover. Additionally, this mix is designed to be cost-effective, while providing deep-rooted plant cover and diversity in locations where wildflowers are not suitable. Once established, this seed mix has the potential to offer a variety of wildlife benefits.

This mix may be installed within the Paneled Areas where the establishment of permanent, low-growing (less than 30 inches in height), shade tolerant grasses are needed, such as under and between the PV panel arrays. This mix may also be installed around the PCUs/invertors, as they may be subject to frequent disturbance, and within a five-foot buffer from the access roads in order to maintain low stature and green vegetative cover where there is adjacent vehicle traffic.

2.1.2.2 Upland Pollinator Friendly Seed Mix – Select Buffer Areas

This mix contains native grasses, sedges, rushes, and wildflowers. The mix is intended to promote a diversity of wildflowers, with flowering occurring over each of the three blooming periods (spring, summer,

and fall), along with native bunch grasses and sedges that are friendly to pollinators (Table A.3, Appendix A). The seed mix is intended to be cost-effective yet robust, provide native plant cover and diversity, and potentially improve soil health.

This mix may be installed in areas outside of a 20-foot buffer from the PV panel arrays in areas along the fence line that are near existing habitat; specifically, areas such as forested lands and tree lines.

2.2 SITE PREPARATION

The following section describes site preparation tasks that may be conducted prior to the installation of the permanent seed mixes. All site preparation activities shall maintain compliance with the ECSWMP.

2.2.1 Seedbed Preparation and Temporary Cover

When construction has been completed, the soils may be lightly disced, raked, and/or rolled, as needed, to reduce surface compaction from construction and to prepare a firm, smooth seedbed. An initial temporary cover crop will be installed into the prepared seedbed (Table A.1-A, Appendix A). The Project Area will be kept in temporary cover until permanent seeding occurs. It is assumed that no further seed bed preparation will be required prior to the installation of the permanent seed and that the permanent seed can be installed over the temporary cover crop.

2.2.2 Invasive and Weed Species Management

For the purpose of this Plan, invasive and weed species will be defined under the following two categories:

1. Compliance - includes species covered under State of Wisconsin Noxious Weeds law (Chapter 66.0407) and the Wisconsin NR 40 Invasive Species Rule. These species will be referred to as ‘invasive species.’

2. Compatibility – includes species that are not legally defined as noxious or ‘invasive’ but may interfere with the solar panels due to plant height, may interfere with ecological goals and the establishment of native species, or may pose vegetation management concerns. These species will be referred to as ‘weeds.’

Invasive and weed species management will be conducted as needed to reduce the spread of invasive species from existing populations into adjacent forest lands, improve establishment and success of the permanent seed mixes, and reduce vegetation impacts to the PV panels and solar facility infrastructure. Flowering non-native species that are not considered invasive and do not have heights that would interfere with the Project operations will not be actively managed.

Invasive species management at this Project may consist of cutting and herbicide treatments. Vegetation management may be conducted during construction and/or the year following construction to prepare the Project Area for permanent seed installation.

2.2.3 Cutting

Vegetation cutting shall be appropriately timed to assist with control invasive species (e.g., mow biennial species during flowering but prior to seed production) and to remove vegetation to assist with site seedbed preparation.

2.2.4 Herbicides

2.2.4.1 Purpose

Herbicide treatments are recommended for management of perennial invasive and noxious species as mowing alone is not typically sufficient for eradication. Ongoing management of invasive and noxious species is required for compliance. Herbicides are also used to remove undesirable vegetation to prepare for permanent seed installation.

2.2.4.2 Herbicide Types

There are three general types of herbicides that would be applicable for use in the Project Area: non-selective, broadleaf-selective, and grass-selective.

Non-Selective Herbicides

Non-selective herbicides injure or kill all types of natural vegetation, including broadleaves, grasses, sedges, rushes, and woody plants. Glyphosate is commonly used to remove vegetation and prepare areas for seeding.

Broadleaf-Selective Herbicides

Broadleaf-selective herbicides are intended to injure or kill only broadleaf plants. There are many types of broadleaf herbicides. Two types commonly used in natural settings include 2,4-D and triclopyr. 2,4-D is often used to remove broadleaf plants from grass-stands. These types of herbicides may be appropriate for controlling weeds within the PV panel arrays where only graminoid species will be installed. Extra caution should be taken to avoid injury to desirable graminoid species by waiting to apply herbicides after desirable grasses, sedges, and rushes have matured and flowered. Triclopyr is effectively used to target woody species.

Grass-Selective Herbicides

Grass-selective herbicides are intended to injure or kill only grasses. The most commonly used grass-selective herbicide is clethodim. It is used to selectively target undesirable grasses growing among desirable broadleaf plants. This herbicide may be appropriate for controlling certain grasses in areas with pollinator-friendly vegetation.

2.2.4.3 Herbicide Application Methods and Timing

There are two primary methods to apply herbicides, low volume/spot applications and broadcast applications. Methods and timing should be based on target species and adjacent vegetation.

Low Volume/Spot Applications

This method utilizes a hand-held sprayer mounted to small (3.5 to 25 gallon) tanks to selectively deliver herbicide to individual plants or small clumps of plants. Backpack sprayers are suitable for small areas while pistol sprayers mounted to an all-terrain vehicle or utility terrain vehicle (UTV) are suitable for larger areas. Wicks may also be used for ultra-low volume delivery of herbicide to undesirable plants growing in sensitive areas. This method may be appropriate for managing discrete populations of weedy and invasive species before and during construction.

Broadcast Applications

This method utilizes a boom or boomless sprayer tanks mounted to a UTV or tractor to broadcast herbicide to large areas. This method is appropriate for large-scale site preparation to remove weedy and invasive vegetation from large areas using a non-selective herbicide.

2.2.4.4 Proposed Herbicides

The herbicides that may be used on the Project are listed below in Table 1. Herbicides were selected that are frequently used in natural area settings to assist with management of the species listed on Table B.1 (Appendix B). These herbicides have a relatively short half-life and moderate to very unlikely potential to reach shallow groundwater. Other herbicides that are often used in natural areas but that are deemed to have unacceptable reported half-life and/or high likelihood of reaching shallow groundwater will not be used on the Project.

Table 1. Environmental Information for Proposed Herbicides

Active Ingredient	Herbicide Type	Potential Uses	Environmental Fate[1,2]			
			Water Solubility	Soil Half-life	Mineral Soil Sorption Coefficient K_{OC} / FAO Mobility Classification[3]	Groundwater Ubiquity Score (GUS)[4] / Potential to Reach Shallow Groundwater
Glyphosate	Non-selective systemic foliar	Non-selective treatment of grasses and broadleaf plants	Very soluble	3.6 days	33,025 / Immobile	-0.29 / Very unlikely
2,4-D	Broadleaf systemic foliar	Selective treatment of weedy and invasive broadleaf plants	Moderately soluble	2.9 days	73 / Mobile	0.99 / Unlikely

Active Ingredient	Herbicide Type	Potential Uses	Environmental Fate[1,2]			
			Water Solubility	Soil Half-life	Mineral Soil Sorption Coefficient K_{OC} / FAO Mobility Classification[3]	Groundwater Ubiquity Score (GUS)[4] / Potential to Reach Shallow Groundwater
Triclopyr	Broadleaf selective foliar	Selective treatment of woody plants	Moderately soluble	13 days in unknown soil	93.6 in unknown soil / Mobile	2.26 in unknown soil / Moderate potential
Clethodim	Grass-selective systemic foliar	Selective treatment of weedy and invasive grasses	Very soluble	3 days in unknown soil	137.5 in unknown soil / Moderately mobile	0.89 in unknown soil / Unlikely

[1] Information from Herbicide Properties Tool at the National Pesticide Information Center – Oregon State University. Accessed online on 2/13/2020 at http://npic.orst.edu/HPT/#.

[2] Reported for sandy soils unless otherwise stated in the Herbicide Properties Tool search results.

[3] Based on FAO Mobility Classification in *Guidance for Reporting on the Environmental Fate and Transport of the Stressor Concern in Problem Formulations*. Accessed online on 2/13/2020 at https://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/guidance-reporting-environmental-fate-and-transport#II_C.

[4] Potential to Reach Shallow Groundwater based on discussion in the Herbicide Properties Tool search results.

2.2.4.5 Herbicide Adjuvants

Adjuvants are typically added to herbicide mixes to improve herbicide performance. Adjuvants typically used for natural areas management include hard water treatment additives, surfactants, and penetrants. Herbicide labels should be consulted for recommendations on the types of adjuvants to add to a mix. In general, aquatic-approved adjuvants should be used to minimize potential impacts on wildlife, including pollinators. Aquatic-approved adjuvants should always be used in and near areas of standing water.

2.2.4.6 Herbicide Best Management Practices

Herbicides are a valuable vegetation management tool when used according to manufacturer's instructions and following industry Best Management Practices (BMPs). The Project will endeavor to employ the following BMPs when herbicides are used to manage undesirable vegetation:

1. Vegetation managers will apply principles of integrated vegetation management. Herbicides will be used as one of several available tools in the toolbox to manage vegetation and habitats in an ecologically-sensitive manner in addition to cutting, engineering controls, and cultural controls.

2. Low volumes of herbicides and adjuvants will be used to target undesirable plants. When practicable, herbicide applicators will utilize targeted application techniques and properly calibrated equipment to limit environmental effects.

3. The lowest concentrations of herbicides and adjuvants as recommended by product labels will be used to achieve intended outcomes.

4. Selective herbicides will be used to limit effects on non-target plants.

5. Herbicide applications will be conducted during favorable weather conditions to minimize off-site drift. Large-scale applications will not be conducted within 48 hours of a significant rainfall (defined as 0.5-inch or greater).

6. Herbicide labels and Safety Data Sheets should be read prior to mixing and application.

Additional BMPs may be developed, as needed, based on site conditions.

2.2.4.7 Herbicide Permitting

Herbicide treatments shall be performed by individuals with a current Commercial Pesticide Applicator certification and license issued through Wisconsin Department of Agricultural, Trade, and Consumer Protection, and in accordance with all applicable laws, regulations, and herbicide label instructions. Herbicide impacts on wetlands will be avoided due to lack of wetlands within the construction area. Selective herbicides (grass-selective or broadleaf-selective) may be used where appropriate to minimize impacts to non-target species and reduce the creation of bare areas.

2.3 PERMANENT SEED INSTALLATION

Permanent seed will be installed after construction, after weedy and invasive species of concern have been managed. Since preparation work will be conducted prior to the temporary seeding, no further seed bed preparation earthwork is anticipated beyond the shallow discing, raking, and/or rolling that will be conducted when construction is completed. It is assumed that the permanent seed can be installed directly into the temporary cover crop thatch.

The permanent native seed mixes (Mixed Native and Non-Native Graminoid, and Upland Pollinator Friendly) shall be installed during the spring seeding window (approximately March 15-June 15) or the fall/frost seeding window (October 30-snow cover or during a period of light snow in the winter). A temporary cover crop may be installed with the permanent seed if installed during the spring (common oats and annual rye) but may require a separate and earlier installation than the permanent seed if installed during the fall/frost seeding window (annual rye and winter wheat).

Seed may be installed with a broadcast seeder within and between the PV panel rows (Mixed Native and Non-Native Graminoid Seed Mix) and near above-ground structures. Outside of the PV panel arrays, seed may be installed with a seed drill or may also be broadcast. Areas receiving permanent seed mixes will be mulched with clean, weed-free straw, following permanent seed installation, as needed and in

compliance with the WDNR conservation practice standard 1058. Areas without remnant temporary cover crop thatch may need mulching.

2.4 PRELIMINARY SCHEDULE OF ACTIVITIES

Table 2 provides a preliminary schedule of activities that will occur up to permanent seed installation.

Table 2. Preliminary Schedule of Vegetation Management Activities

Activity	Timeframe[1]
Contract with nursery to procure native seeds	2021
Start of construction	July 2021
Initial temporary seed installation following vegetation removal, grading, and as-needed seed bed preparation	August – September 2021
Secondary temporary seed installation	Spring 2022
As-needed temporary seed installation to stabilize soils impacted by construction	Growing season 2022
Project COD, start of 30-year facility life period	September 2022
Install permanent native seed mixes (Mixed Native & Non-Native Graminoid Seed Mix, and Upland Pollinator Friendly Seed Mix)	October 2022 - May 2023
Maintain permanent vegetation	May 2023 - September 2052

[1] Timing for vegetation management activities may be based on construction sequencing. Actual schedules for temporary seed installation, seed bed preparation, and permanent seeding may be based on construction timing within each array area.

3.0 MONITORING AND MAINTENANCE PLAN

All areas will require some form of ongoing maintenance to establish and maintain desirable vegetation that is compatible with the solar panels and Project operations. Maintenance is expected to be most intensive in the establishment phase, or approximately 2 to 3 years following seeding as desirable species germinate, grow, and start to mature (flower). In general, native species take longer to mature and flower than non-native species. Vegetation cutting and herbicide applications will be conducted as discussed below. Monitoring will occur to confirm compatibility of vegetation with facility goals. Monitoring will be completed concurrently with routine vegetation maintenance activities.

3.1 VEGETATION CUTTING

Cutting, by mowing or hand-trimming, is the primary management tool used to establish desirable vegetation. It is done to reduce height, reduce flowering of undesirable vegetation, and maintain light at the ground surface to encourage germination and growth of desirable species. Mowing using a deck (rotary or flail) mower is applicable in areas that are accessible with a small tractor and mower, such as buffer areas and potentially between rows of panels depending on final row spacing. A 3-point side-mounted trimmer mower attached to a small tractor may also be used to cut vegetation around steel piles and under panels if areas are accessible with equipment.

3.1.1 Mowing Frequency and Timing

Frequent cutting is typically required during the establishment phase (post-seeding years 1 and 2) to reduce fast-growing weeds, minimize vegetation height under the PV panels, and assist with growth of planted species. This applies to all areas seeded to the Mixed Native and Non-Native Graminoid Seed Mix as well as the Upland Pollinator Friendly Seed Mix. Actual timing of mowing should be dependent on when vegetation reaches a height of 18-24 inches but may be approximately every 6 weeks from May-September.

Years 3-5 represent a transition phase where desirable vegetation becomes increasingly established but remains susceptible to weed growth. The frequency of cutting may be reduced (approximately once per year), or transition to selective mowing to target specific areas of weed growth and minimize vegetation height under the PV panels.

Over the long-term (years 6-30), is expected that mowing can be further reduced (approximately once every other year). Mowing at this time may be done to reduce thatch and litter build-up and minimize the establishment of woody vegetation.

3.1.2 Mowing Height

3.1.2.1 Mixed Native and Non-Native Graminoid Seed Mix

Areas planted to the Mixed Native and Non-Native Graminoid Seed Mix (primarily within and between the PV panel rows) should be mown when vegetation reaches a height of 18-24 inches and be cut to a height of 6-10 inches. This seed mix can be maintained at a height of 6-10 inches for the life of the facility. Installed species within the mix will likely stay below 32 inches in height (typically 12-24 inches) and mowing will primarily be conducted to reduce weed species during the establishment phase.

3.1.2.2 Upland Pollinator Friendly Seed Mix

In general, the Upland Pollinator Friendly Seed Mix should be cut when vegetation reaches a height of 20-30 inches, starting the growing season immediately following permanent seeding. Vegetation in native planting areas should be cut to a height of 6-10 inches during the first growing season following seeding, and to a height of 10-12 inches thereafter. Routinely mowing native prairie species lower than 6-8 inches after the first year of establishment will favor non-native grasses and wildflowers and should be minimized.

3.2 HERBICIDE APPLICATIONS

Herbicides may be used for long-term maintenance of areas planted with each seed mix. Herbicide type and method of application are highly dependent on target species and vegetation maintenance goals. The herbicides listed in Table 1 may be used throughout the life of the Project. Low volume / spot applications are appropriate for use in all areas during the establishment period (years 1 and 2) to spot treat invasive and incompatible species. Beyond the establishment period, this method is also appropriate for use in areas planted in Upland Pollinator Friendly Seed Mixes to minimize impacts on desirable vegetation and wildlife. Broadcast applications are generally not appropriate in areas planted with the Mixed Native and Non-Native Graminoid Seed Mix (to avoid spraying the panels), and the Upland Pollinator Friendly Seed Mix. Vegetation management should be based on existing conditions in any given area.

A combination of herbicides and application techniques is typically required to manage large areas. Herbicide use will be minimized to the extent practicable and will be conducted by trained and licensed personnel in accordance with label rates.

4.0 SUMMARY

This Vegetation Management Plan was prepared to outline revegetation tasks after construction of the Project Area. This plan provides guidance to WCSP on 30 years of maintenance following the installation of permanent vegetation. The planting plan includes the installation of an Upland Pollinator Friendly Seed Mix, where feasible, that include pollinator friendly wildflowers, bunch grasses, and sedges. A Mixed Native and Non-Native Graminoid Seed Mix was selected for installation under and between the PV panels that is anticipated to be compatible with minimum leading edge height of 30 inches to 42 inches and shading from the panels, as well as provide low maintenance and hardy vegetative cover. The implementation and maintenance tasks provided in this plan will assist WCSP in maintaining compliance with PSCW requirements for Project revegetation. It is anticipated that the planting plan will result in improved plant species diversity and soil health compared to the pre-construction silvicultural land use conditions.

APPENDICES

APPENDIX A SEED MIX TABLES

Table A.1-A Temporary Fall Array Cover Crop Seed Mix*

Scientific Name	Common Name
Triticum aestivum	Winter Wheat[2]
Trifolium incarnatum	Crimson Clover[1]

Table A.1-B Temporary Spring-Summer Array Cover Crop Seed Mix*

Scientific Name	Common Name
Avena sativa	Seed Oats
Trifolium alexandrinum	Berseem Clover[1]

Table A.1-C Temporary Pollinator Friendly Area Cover Crop Seed Mix*

Scientific Name	Common Name
Avena sativa	Seed Oats
Lolium multiflorum	Annual Rye
Triticum aestivum	Winter Wheat

Table A.2 Mixed Native & Non-Native Graminoid Seed Mix*

Scientific Name	Common Name
Bouteloua curtipendula	Side-oats Grama
Carex brevior	Fescue Sedge
Elymus trachycaulus	Slender Wheat Grass
Eragrostis spectablis	Purple Love Grass
Juncus tenuis	Path Rush
Koeleria macrantha	Junegrass
Lolium perenne[3]	Perennial Rye Grass
Muhlenbergia mexicana	Leafy Satin Grass
Schizachyrium scoparium	Little Bluestem

*Final seed mixes and rates will be determined based on factors such as site conditions and market availability
[1]Appropriate inoculant shall be added at time of seeding.
[2]Serves as a nurse crop for additional temporary seeding the following growing season.
[3]Non-native species

Table A.3 Upland Pollinator Friendly Seed Mix*

Scientific Name	**Common Name**
Grasses and Sedges	
Bouteloua curtipendula	Side-oats Grama
Carex brevior	Fescue Sedge
Elymus trachycaulus	Slender Wheat Grass
Eragrostis spectabilis	Purple Love Grass
Juncus tenuis	Path Rush
Koeleria macrantha	June Grass
Muhlenbergia mexicana	Leafy Satin Grass
Schizachyrium scoparium	Little Bluestem
Forbs	
Aquilegia canadensis	Columbine
Baptisia bracteata	Cream Wild Indigo
Heuchera richardsonii	Prairie Alumroot
Tradescantia ohiensis	Ohio Spiderwort
Amorpha canescens	Leadplant
Asclepias syriaca	Common Milkweed
Asclepias tuberosa	Butterfly Weed
Agastache foeniculum	Blue Giant Hyssop
Chamaecrista fasciculata	Partridge Pea
Coreopsis lanceolata	Lanceleaf Coreopsis
Coreopsis palmata	Prairie Coreopsis
Dalea candida	White Prairie Clover
Dalea purpurea	Purple Prairie Clover
Liatris aspera	Rough Blazing Star
Monarda punctata	Dotted Mint
Solidago juncea	Early Goldenrod
Solidago speciosa	Showy Goldenrod
Rudbeckia hirta	Black-eyed Susan
Verbena stricta	Hoary Vervain
Symphyotrichum ericoides	Heath Aster
Symphyotrichum oolentangiense	Sky Blue Aster
Symphyotrichum laeve	Smooth Blue Aster

*Final seed mixes will be determined based on factors such as site conditions and market availability.