Appendix L

Conceptual Mitigation Planting Plan

Byron Solar Project

Dodge and Olmsted counties, Minnesota

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Conceptual Mitigation Planting Plan

Byron Solar

Olmsted County, Minnesota

Mitigation Planting Plan Design Methodology

The Byron Solar Facility will include the installation of a variety of visual screening treatments at different areas throughout the Facility Site. A Conceptual Visual Mitigation Planting Plan was developed as part of the Facility's Site Permit Application to the Minnesota Public Utilities Commission with the goal of minimizing and mitigating the Facility's visual effects. This Conceptual Visual Mitigation Planting Plan consists of a master plant list and detailed planting modules designed for specific circumstances. While the planting modules are not designed to completely screen views of the proposed Facility, the introduction of native tree and shrub mixes at appropriate locations adjacent to the Facility is intended to soften the visual effect of the Facility. The natural forms and colors of the planted vegetation will partially screen and divert viewer attention from the modern materials and inorganic forms of the photovoltaic panel arrays.

The conceptual planting plan design was developed using the following approach:

- Represent existing visual character and vegetation within the Facility site and surrounding area.
- Maintain existing vegetation/hedgerows where feasible.
- Install native, non-invasive species that provide ecological benefits.
- Soften the appearance of the perimeters of the PV arrays/perimeter fences so that they blend into the existing landscape.
- Take design and material cues from the surrounding landscape.

Selection of Plant Materials

When designing a conceptual mitigation planting plan, it is important to propose a site-specific selection of plant materials that can provide the appropriate level of vegetative screening, match the vegetation and visual character of the existing landscape, provide ecological benefits, and prioritize the use of native vegetation species. Environmental Design & Research, D.P.C. (EDR) staff with expertise in landscape architecture and visual impact assessment conducted a review of botanical and soil properties information available for the Facility Site and adjacent areas. This provided guidance regarding the production of the master plant list to be included in the conceptual mitigation planting plan.

The site consists of a mosaic of landscape types, primarily open fields with active agriculture or early successional (i.e. old field) communities, mixed forest or hedgerows dominated by deciduous species, and formal or intentional landscapes around residential properties. The conceptual planting modules developed for the Facility intentionally mimic the character of the existing roadside vegetation, hedgerows and forest stands in an effort to visually integrate of the Facility into the surrounding landscape.

Plant species to be included in the conceptual master plant list (see below), were chosen based on county-level records of native plants as available through the USDA PLANTS Database (USDA, NRCS 2021), as well as Ecoregions of Minnesota descriptions provided through the US EPA (White, 2020). In addition, soil classification and properties data available through the USDA NRCS WebSoilSurvey application was used to ensure that species proposed would be broadly appropriate for the site soils. The Minnesota Department of Agriculture 2021 Noxious Weed List was consulted to ensure that no invasive species were proposed.

Examples of landscape character found around the Facility Site.

MASTER PLANT LIST

TREES	COMMON NAME	SIZE	GROWTH RATE	MATURE SIZE
LARGE DECIDUOUS TREE				
Acer saccharum	Sugar Maple	1" Cal.	Medium	60`-75` H x 40`-50` W
Quercus alba	White Oak	1" Cal.	Medium	50`-80` H x 50`-80` W
Quercus macrocarpa	Bur Oak	1" Cal.	Slow	60`-80` H x 60`-80` W
Quercus rubra	Red Oak	1" Cal.	Medium	60`-75` H x 60`-75` W
Tilia americana	American Linden	1" Cal.	Medium	60`-80` H x 30`-60` W
MEDIUM DECIDUOUS TREE				
Acer rubrum	Red Maple	1" Cal.	Fast	40`-60` H x 35`-45` W
Carpinus caroliniana	American Hornbeam	5` Ht.	Slow	20`-40` H x 20`-30` W
Ostrya virginiana	American Hophornbeam	1" Cal.	Slow	25`-40` H x 20`-30` W
Populus tremuloides	Quaking Aspen	5 gal.	Medium	20`-50` H x 10`-30` W
SMALL FLOWERING TREE				
Amelanchier laevis	Allegheny Serviceberry	5` Ht.	Medium	15`-25` H x 15`-25` W
Amelanchier x grandiflora	Apple Serviceberry	5` Ht.	Medium	15`-25` H x 15`-25` W
Crataegus crus-galli	Cockspur Hawthorn	1" Cal.	Medium	25`-35` H x 25`-35` W
Hamamelis virginiana	Common Witch Hazel	4` Ht.	Medium	15`-20` H x 15`-20` W
LARGE EVERGREEN				
Abies balsamea	Balsam Fir	5` Ht.	Medium	50`-70` H x 15`-25` W
Abies concolor	White Fir	4` Ht.	Slow	40`-70` H x 20`-30` W
Picea glauca	White Spruce	4` Ht.	Medium	40`-60` H x 10`-20` W
Pinus resinosa	Red Pine	4` Ht.	Slow	50`-80` H x 20`-25` W
Pinus strobus	White Pine	4` Ht.	Fast	50`-80` H x 20`-40` W
SMALL / MEDIUM EVERGREEN				
Abies balsamea phanerolepis	Canaan Balsam Fir	5` Ht.	Medium	40`-55` H x 20`-25` W
Juniperus virginiana	Eastern Red Cedar	4` Ht.	Medium	40`-50` H x 8`-20` W
Picea glauca `Densata`	Black Hills Spruce	4` Ht.	Slow	20`-40` H x 10`-15` W
Picea pungens `Fat Albert`	Fat Albert Colorado Spruce	5` Ht.	Slow	10`-15` H x 7`-10` W

SHRUBS	COMMON NAME	SIZE	GROWTH RATE	MATURE SIZE
LARGE MASS-FORMING SHRUB				
Cornus racemosa	Gray Dogwood	3` Ht.	Medium	10`-15` H x 10`-15` W
Corylus americana	American Hazelnut	3` Ht.	Medium	6`-10` H x 6`-10` W
Rhus typhina	Staghorn Sumac	3` Ht.	Fast	15`-25` H x 20`-30` W
Salix discolor	Pussy Willow	3` Ht.	Fast	6`-15` H x 4`-12` W
MEDIUM SHRUB				
Aronia melanocarpa	Black Chokeberry	3` Ht.	Medium	3`-6` H x 3`-6` W
Cornus amomum	Silky Dogwood	2` Ht.	Medium	6`-12` H x 6`-12` W
Cornus sericea	Red Twig Dogwood	2` Ht.	Fast	7`-10` H x 7`-10` W
Lindera benzoin	Spicebush	2` Ht.	Medium	6`-12` H x 6`-12` W
SMALL SHRUB				
Amelanchier stolonifera	Running Serviceberry	1 gal.	Slow	4`-5` H x 4`-5` W
Rhus aromatica	Fragrant Sumac	5 gal.	Medium	2`-6` H x 6`-10` W
Rosa carolina	Carolina Rose	2` Ht.	Fast	3`-6` H x 3`-6` W
Rosa virginiana	Virginia Rose	2` Ht.	Medium	4`-6` H x 6`-8` W

Conceptual Planting Modules

The Applicant developed three individual planting modules, each designed to apply to a specific circumstance within the Facility Site or accomplish a different set of goals. The three modules include:

1. Roadside Enhancement
2. Open Field / Supplemental Hedgerow
3. Adjacent Visually Sensitive Resource / Residence

Descriptions of these modules are provided below:

Module 1 | Roadside Enhancement

Module 1 is generally intended to be used along roads in locations where existing roadside screening is absent and the facility's perimeter fence is located within 100' of the centerline of the road. Module 1 may also be used in visually sensitive areas along a road when the facility is further than 100' away, such as at intersections, adjacent to neighboring driveways, or along sharp turns. Vegetation will not be installed in locations where the land between the solar facility and the roadside is planned to remain in crop production after construction.

Conceptually, Module 1 is designed to integrate the Facility Site into the landscape by mimicking the surrounding roadside vegetation, which includes active agricultural fields, hedgerows, and woodlots. Consequently, Module 1 uses a selection of large to medium-sized shrubs, small to medium trees, evergreen material, and herbaceous perennials that will remain relatively low at mature height and provide a variety of color throughout the year. This module can be adapted to different roadside conditions, for example by adding evergreens in locations where they are more common in the existing landscape, or by emphasizing lower-growing species in locations where potential shading of the PV panels by larger tree species is a concern.

The Module 1 planting plan is designed to mimic the spacing and pattern of existing roadside and hedgerow vegetation as perceived by viewers who will experience the landscape from a moving vehicle while traveling along the adjacent roadway. Large spacing distances are thus proposed for the plant material both parallel to the roadway (i.e., lateral to the direction of travel) and perpendicular to the roadway (i.e., from the road toward the PV panel arrays). Plants will be grouped into naturalistic clusters, with lateral spacing of approximately 30-50 feet between clusters combined with 20-30 feet of spacing in the perpendicular direction. While such spacing would be ineffective for completely screening views from a residence or other fixed vantage point, this design works well when viewed from a moving vehicle. To accomplish the goals of Module 1, planting areas are located outside the road right-of-way and placed approximately 15 feet from the perimeter fence surrounding the solar array.

MODULE 1 PLANT SCHEDULE

MEDIUM DECIDUOUS TREE
Acer rubrum / Red Maple
Carpinus caroliniana / American Hornbeam
Ostrya virginiana / American Hophornbeam
Populus tremuloides / Quaking Aspen

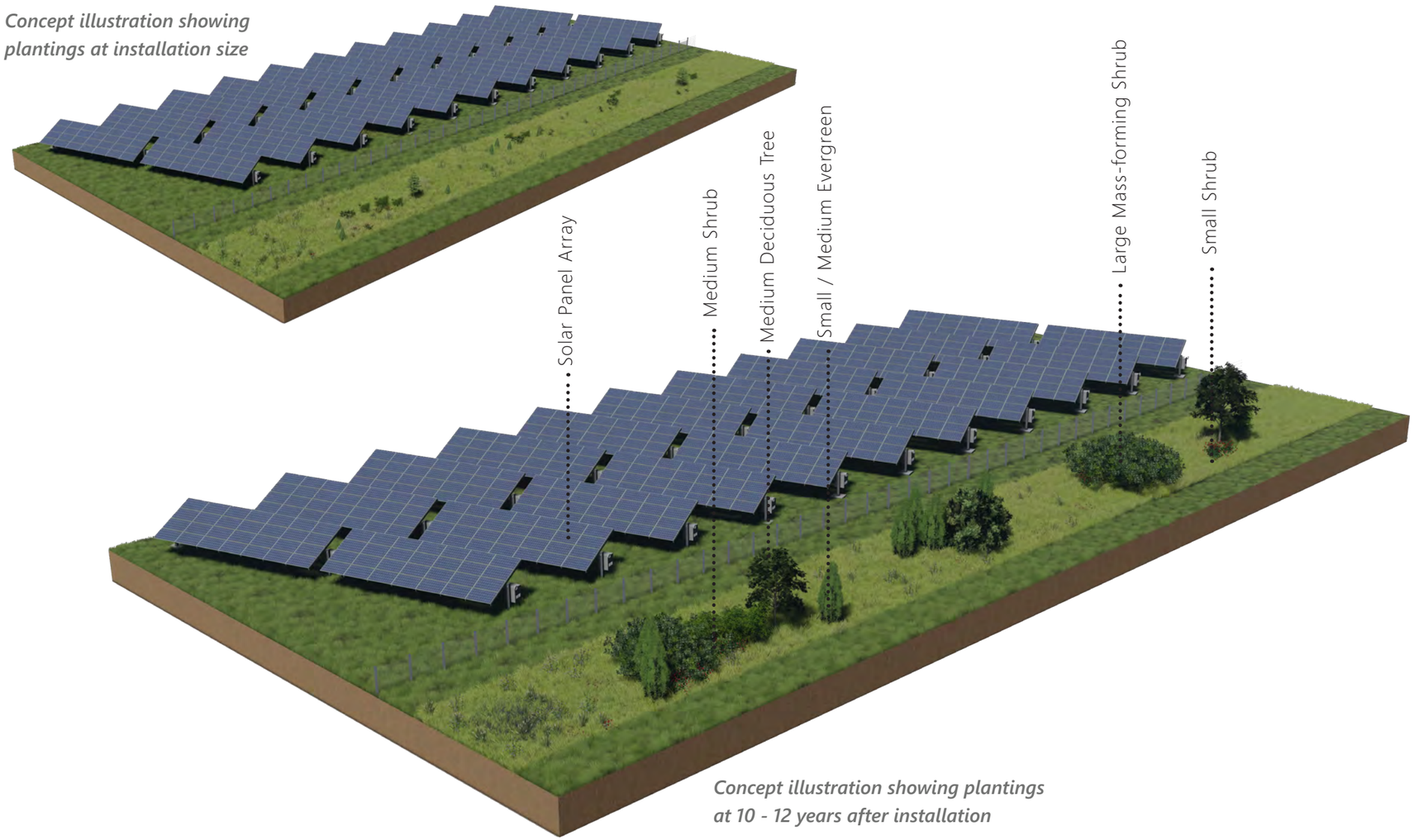
SMALL / MEDIUM EVERGREEN
Abies balsamea phanerolepis / Canaan Balsam Fir
Juniperus virginiana / Eastern Red Cedar
Picea glauca `Densata` / Black Hills Spruce
Picea pungens `Fat Albert` / Fat Albert Colorado Spruc

LARGE MASS-FORMING SHRUB
Cornus racemosa / Gray Dogwood
Corylus americana / American Hazelnut
Rhus typhina / Staghorn Sumac
Salix discolor / Pussy Willow

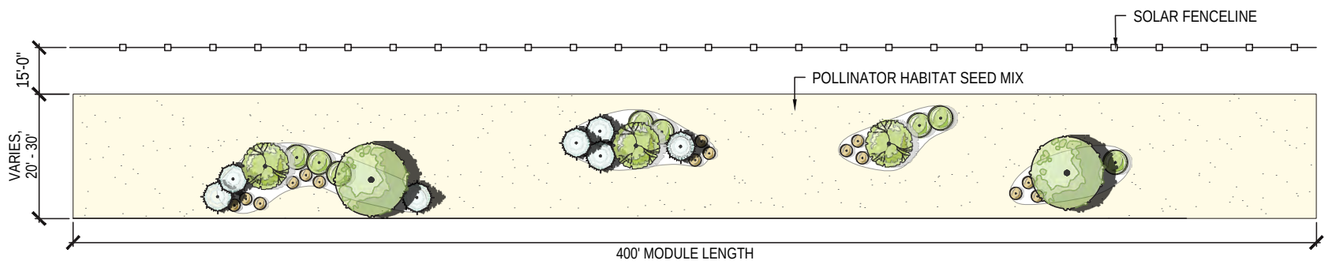
MEDIUM SHRUB
Aronia melanocarpa / Black Chokeberry
Cornus amomum / Silky Dogwood
Cornus sericea / Red Twig Dogwood
Lindera benzoin / Spicebush

SMALL SHRUB
Amelanchier stolonifera / Running Serviceberry
Rhus aromatica / Fragrant Sumac
Rosa carolina / Carolina Rose
Rosa virginiana / Virginia Rose

Concept illustration showing plantings at installation size



Concept illustration showing plantings at 10 - 12 years after installation



Planting Module 1:
Roadside Enhancement

Conceptual Planting Modules Continued

Module 2 | Open Field / Supplemental Hedgerow

Throughout the Facility area, narrow hedgerows occasionally occur between agricultural fields or along roadsides. These hedgerows contribute to the overall character of the visual study area by reinforcing the mosaic pattern of open fields and trees, and enclosing portions of the road system. Module 2 is designed to be used where existing hedgerows are present but do not provide the amount of screening desired at that location. The module is intended to be flexible, so that final choices of plant material can respond to the particular spacing and character of each existing hedgerow, as well as the potential for shading of PV panels.

The selection and spacing of plant materials is generally similar to Module 1, but as it is primarily intended to be used in selected locations where plantings will be along the north side of the proposed PV arrays or filling gaps in an existing hedgerow that will remain, Module 2 uses a tighter spacing and may use larger plant material. This additional height of screening is proposed because shadows are not a concern in such locations, and the larger material will provide more substantial screening of the Facility.

Module 2 can be adapted to fill breaks in hedgerows with plantings that mimic the specific material and scale of the surrounding hedgerow vegetation, allowing the proposed planting plan to blend into the existing hedgerow and create more continuous visual screening along the perimeter of the Facility Site.

Module 2 provides a supplemental approach that compliments Module 1 and Module 3 and can provide additional screening for homes or sensitive roads.

Byron Solar will work with local community members to identify visually sensitive locations that warrant additional buffering. As a general rule of thumb, Byron Solar does not intend to install visual buffering if the distance between the sensitive receptor and the nearest solar facility infrastructure is greater than 500'.

MODULE 2 PLANT SCHEDULE

LARGE DECIDUOUS TREE — 2
Acer saccharum / Sugar Maple
Quercus alba / White Oak
Quercus macrocarpa / Bur Oak
Quercus rubra / Red Oak
Tilia americana / American Linden

MEDIUM DECIDUOUS TREE — 2
Acer rubrum / Red Maple
Carpinus caroliniana / American Hornbeam
Ostrya virginiana / American Hophornbeam
Populus tremuloides / Quaking Aspen

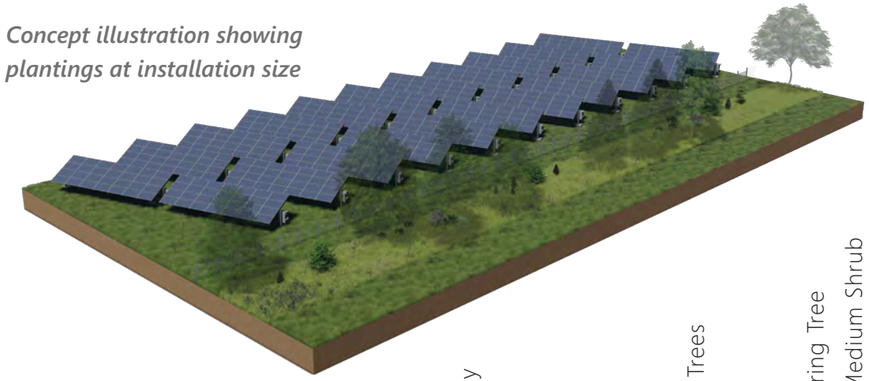
SMALL FLOWERING TREE — 2
Amelanchier laevis / Allegheny Serviceberry
Amelanchier x grandiflora / Apple Serviceberry
Crataegus crus-galli / Cockspur Hawthorn
Hamamelis virginiana / Common Witch Hazel

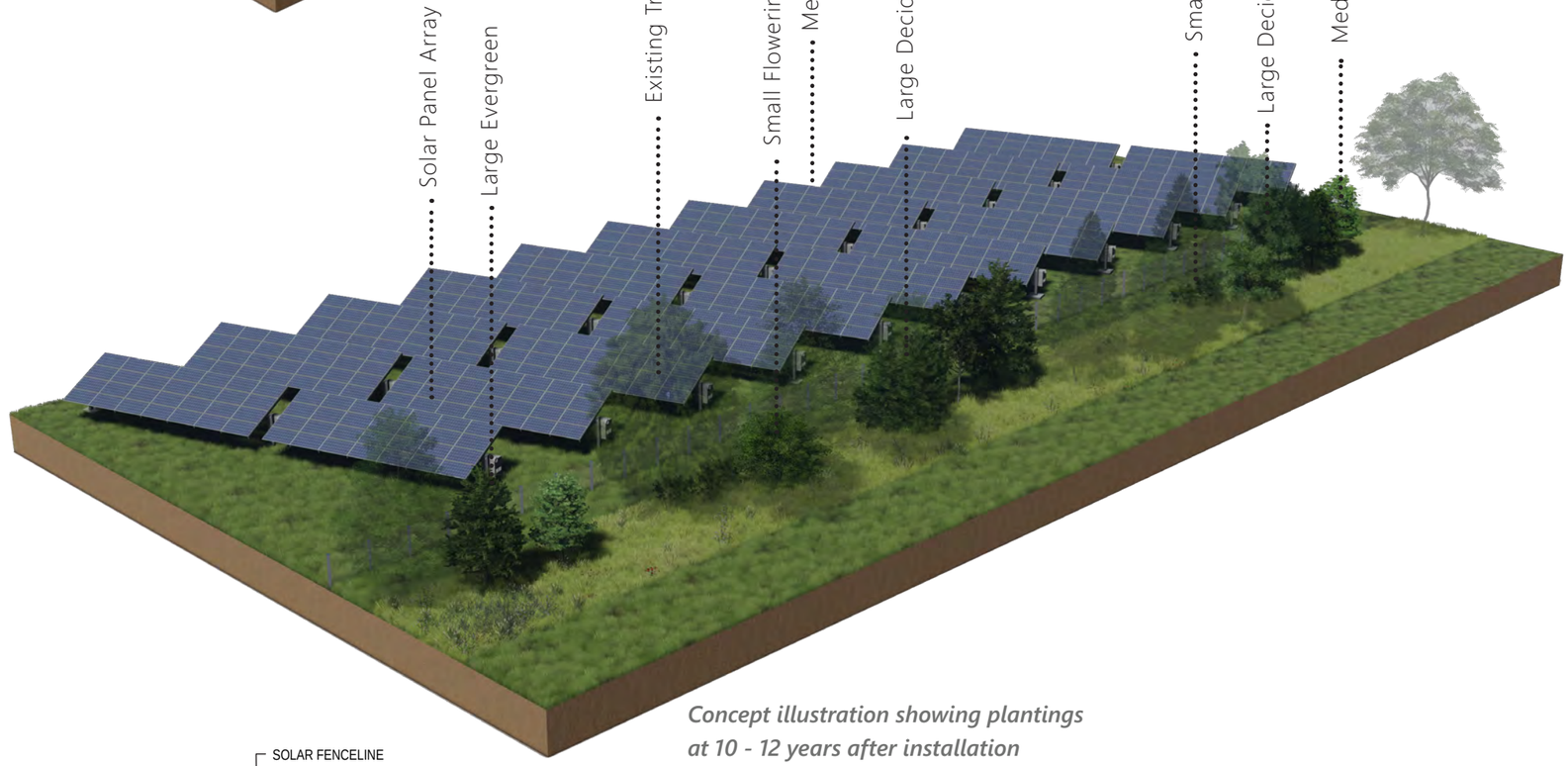
LARGE EVERGREEN — 3
Abies balsamea / Balsam Fir
Abies concolor / White Fir
Picea glauca / White Spruce
Pinus resinosa / Red Pine
Pinus strobus / White Pine

SMALL / MEDIUM EVERGREEN — 3
Abies balsamea phanerolepis / Canaan Balsam Fir
Juniperus virginiana / Eastern Red Cedar
Picea glauca `Densata` / Black Hills Spruce
Picea pungens `Fat Albert` / Fat Albert Colorado Spruce

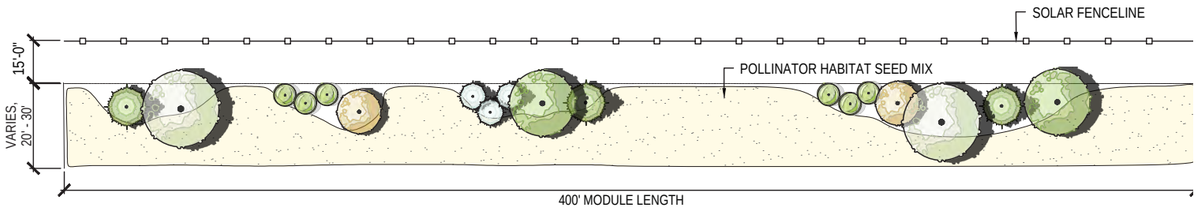
MEDIUM SHRUB — 6
Aronia melanocarpa / Black Chokeberry
Cornus amomum / Silky Dogwood
Cornus sericea / Red Twig Dogwood
Lindera benzoin / Spicebush

Concept illustration showing plantings at installation size





Concept illustration showing plantings at 10 - 12 years after installation



Planting Module 2:
Open Field / Supplemental Hedgerow

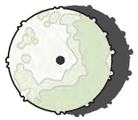
Conceptual Planting Modules Continued

Module 3 | Adjacent Resource / Residence

Module 3 consists of a thicker planting that will result in more complete screening of views toward the Facility Site from adjacent homes or Visually Sensitive Resources. Plant species used are similar to Module 2, but a greater emphasis is placed on evergreen species that will provide denser year-round screening. Module 3 seeks to provide this screening effect while still blending into the existing landscape as much as possible. The plant arrangements are therefore intended to be naturalistic, and species chosen are in keeping with the local vegetation. As with Modules 1 and 2, Module 3 is a flexible concept, so that final species chosen for a given location can respond to the unique character and needs of that location.

Byron Solar has engaged and will continue to engage with neighboring homeowners to adapt Module 3 to the unique circumstances of our neighbors. These plantings will provide visual buffering for homes within 500' of the solar facility's perimeter fence.

MODULE 3 PLANT SCHEDULE



LARGE DECIDUOUS TREE — 2
Acer saccharum / Sugar Maple
Quercus alba / White Oak
Quercus macrocarpa / Bur Oak
Quercus rubra / Red Oak
Tilia americana / American Linden

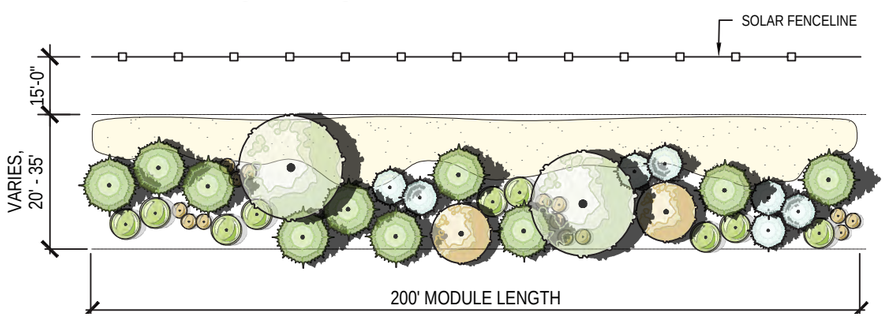
SMALL FLOWERING TREE — 2
Amelanchier laevis / Allegheny Serviceberry
Amelanchier x grandiflora / Apple Serviceberry
Crataegus crus-galli / Cockspur Hawthorn
Hamamelis virginiana / Common Witch Hazel

LARGE EVERGREEN — 10
Abies balsamea / Balsam Fir
Abies concolor / White Fir
Picea glauca / White Spruce
Pinus resinosa / Red Pine
Pinus strobus / White Pine

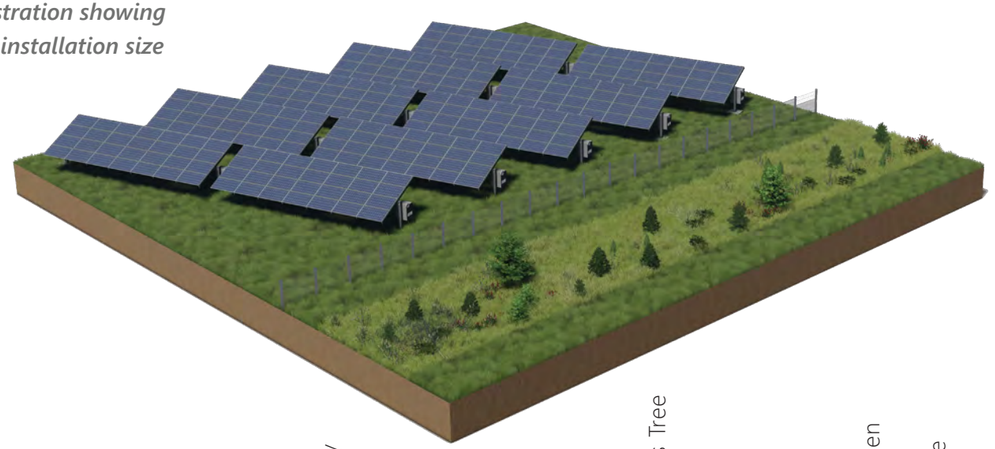
SMALL / MEDIUM EVERGREEN — 7
Abies balsamea phanerolepis / Canaan Balsam Fir
Juniperus virginiana / Eastern Red Cedar
Picea glauca `Densata` / Black Hills Spruce
Picea pungens `Fat Albert` / Fat Albert Colorado Spruce

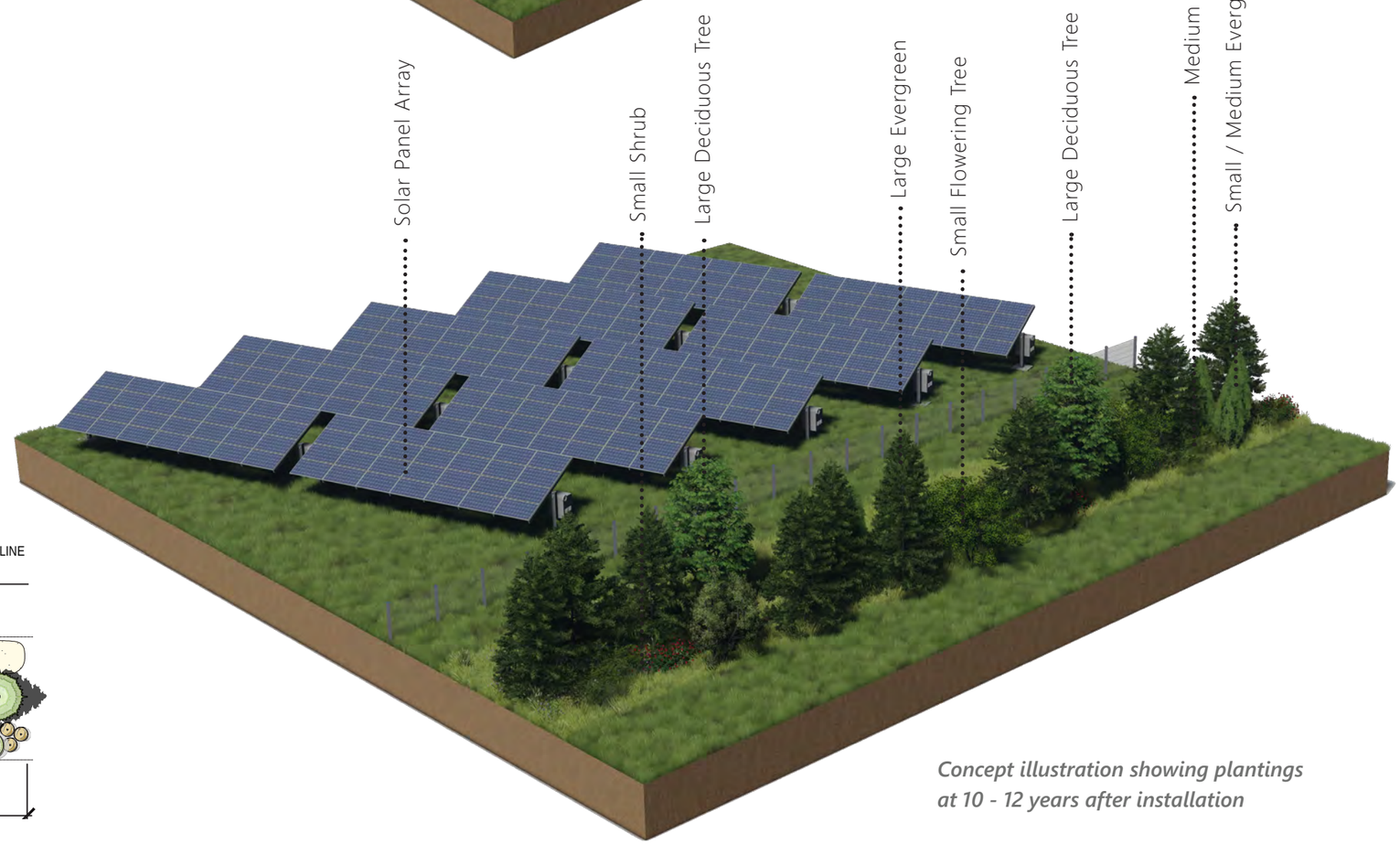
MEDIUM SHRUB — 9
Aronia melanocarpa / Black Chokeberry
Cornus amomum / Silky Dogwood
Cornus sericea / Red Twig Dogwood
Lindera benzoin / Spicebush

SMALL SHRUB — 14
Amelanchier stolonifera / Running Serviceberry
Rhus aromatica / Fragrant Sumac
Rosa carolina / Carolina Rose
Rosa virginiana / Virginia Rose



Concept illustration showing plantings at installation size





Concept illustration showing plantings at 10 - 12 years after installation

Byron Solar
Olmsted County, Minnesota
Conceptual Mitigation Plan | Conceptual Planting Modules

Planting Module 3:
Adjacent Resource / Residence

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