BEFORE THE OHIO POWER SITING BOARD

In the Matter of the Application of Angelina Solar I, LLC for a Certificate of Environmental Compatibility and Public Need	**)** **)** **)** **)**	**Case No. 18-1579-EL-BGN**

SUPPLEMENTAL TESTIMONY OF MATTHEW ROBINSON

Q.1. Please state your name, title and business address.

A.1. My name is Matthew Robinson. I am a Visualization Project Manager at Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C ("EDR"). My business address is 217 Montgomery Street, Suite 1000, Syracuse, New York 13202.

Q.2. On whose behalf are you offering testimony?

A.2. I am testifying on behalf of the Applicant, Angelina Solar I, LLC.

Q.3. Did you previously provide testimony on behalf of the Applicant?

A.3. Yes, on August 1, 2019.

Q.4. What is the purpose of your supplemental testimony?

A.4. To address Condition 3 and Condition 11 in the Amended and Restated Joint Stipulation and Recommendation filed on July 29, 2020 ("Amended Joint Stipulation").

Q.5. Have you reviewed the Amended Joint Stipulation?

A.5. Yes.

Q.6. Do you support Condition 3 in the Amended Joint Stipulation?

A.6. Yes. Condition 3 has been revised to provide for minimum distances for specific setbacks that will allow for greater screening of the Project from residences.

Q.7. How will the changes to Condition 3 in the Amended Joint Stipulation affect the visual impact of the Project?

A.7. Specific to my testimony, Condition 3 has been revised to require a minimum setback of 150 feet between the facility fence and any residence on a non-participating parcel. The prior setback to a residence on a non-participating parcel was 100 feet from the above-ground equipment to the residence. By incorporating these expanded setbacks, the perceived scale of the Project will be reduced. The proposed landscape mitigation design, although designed to work within the original setbacks of the proposed layout will benefit from the increased space which will further allow the proposed modules to achieve the goals set forth in the Landscape Mitigation Plan.

Q.8. How does the addition of the proposed minimum setbacks make screening or mitigation more effective?

A.8. Providing additional setback distance enhances the overall goals of the Landscape Mitigation Plan. The setbacks do this by allowing for greater options and flexibility when determining specific vegetation material and placement within the proposed modules. The larger setback provides more room for vegetation to grow and become an established part of the existing landscape. This allows the proposed landscape mitigation to be more fully-integrated with the surrounding vegetation and landscape character, providing a more natural appearance that blends the Project into the background. Further, the increased setbacks operate to decrease the Project's perceived scale to viewers on the non-participating parcel, within the existing landscape. Decreasing scale through a larger setback allows for further integration into the existing view, because of the minimization of perceived scale, and no longer is the single dominant feature.

Q.9. Will there be other benefits from the revisions to Condition 3 in the Amended Joint Stipulation?

A.9. Additional aesthetic benefits that are achieved through condition 3 are related to the final stage of landscape design, the choice and size of install material. Because the Project's profile is reduced by this greater distance, options for final module placement and size of the vegetation at install can be further catered to serve the desired screening goals of the Landscape Mitigation Plan.

Q.10. Is Condition 3 in the Amended Joint Stipulation in the public interest?

A.10. Yes. By enlarging the Project setback from residences on non-participating parcels, Condition 3 improves the Applicant's ability to effectively screen and mitigate the Project's visual impact.

Q.11. Do you support Condition 11 in the Amended Joint Stipulation?

A.11. Yes. Condition 11 ensures that an effective visual mitigation plan, focused on the line of sight from residences on non-participating parcels, is developed in consultation with a licensed landscape architect prior to commencement of any construction, and it further ensures that the Applicant will maintain the vegetative screen for the life of the Project and replace any failed plantings to ensure at least 90% of the vegetation survives for five years. In addition, Condition 11 ensures the Project's perimeter lighting shall be motion-activated, downward facing, and/or fitted with side shields in order to limit any lighting impacts.

Q.12. How will the changes to Condition 11 in the Amended Joint Stipulation affect the visual impact of the Project?

A.12. The changes to Condition 11 ensure that the plan shall provide for the installation of vegetative screening material to soften the Project's edge within the view from the any adjacent, non-participating parcel that contains a residence with a direct line of sight to the Project, while also maintaining flexibility by allowing for the possibility of alternative mitigation agreements with those owners. This change ensures that, at a minimum, those owners will be provided with a vegetative buffer that will provide screening and additional mitigation from the residence and blend the Project with the existing vegetation, thereby ensuring that the visual impact of the Project will be kept to a minimum for non-participating, adjacent landowners. Further, the plan for such vegetative screenings will be prepared prior to any construction and will be in consultation with a landscape architect, licensed by the Ohio Landscape Architects Board, to ensure a professional result.

Further, the changes to Condition 11 also establish that the Applicant will maintain the vegetative screenings for the life of the facility and that the Applicant shall replace any failed plantings so that after 5 years at least 90 percent of the vegetation has survived. This additional commitment will further ensure that the visual impact remains mitigated and does not degenerate over time. In addition, the changes to Condition 11 require that the lighting plan will employ motion-detection lights and will provide that lighting will be downward facing and/or fitted with side-shields, which will in turn operate to reduce the lighting impact of the Project.

Q.13. Has a preliminary landscaping plan been prepared for the Project that incorporates the setback and planting of vegetative screening requirements?

A.13. Yes, I prepared a preliminary landscape mitigation plan for the Project and it is attached to my testimony as Attachment 1. The plan shows how the setbacks required by Condition 3 and the requirements for planting of vegetative screening contained in Condition 11 will be incorporated into the final plan. While the plan is subject to changes in the preliminary layout through final engineering and review by an Ohio licensed landscape architect, I do not anticipate significant changes to the plan.

Q.14. Is Condition 11 in the Amended Joint Stipulation in the public interest?

A.14. Yes. Condition 11 serves the public interest by putting in place measures to mitigate and limit the visual impact of the Project through a variety of measures including continued maintenance of vegetative screening for the life of the Project.

Q.15. Does this conclude your supplemental direct testimony?

A.15. Yes, it does

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a courtesy copy of the foregoing document is also being served upon the persons below via electronic mail this 13th day of October 2020.

/s/ Michael J. Settineri

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Angelina Solar
Landscape Mitigation Plan

Attachment 1

Table of Contents

1.0 Introduction

The minimization and mitigation of visual impacts is an important consideration when siting and designing solar facilities. This plan will highlight and focus on the use of vegetation to help screen views of a solar facility, improve the aesthetics of a project, and provide ecological and wildlife habitat benefits to the community as a whole. This approach is becoming well-established as the preferred method of mitigating visual impacts for solar facilities throughout the country (e.g., Scenic Hudson, 2018; Sullivan and Abplanalp, 2013; Walston, et al. 2018).

Angelina Solar I, LLC (the "Project"), in consultation with Environmental Design and Research, Landscape Architecture, Engineering & Environmental Services, D.P.C (EDR), has worked to develop this plan, which is designed for the climate and existing natural and vernacular landscapes present in the area surrounding the Project. The conceptual visual mitigation planting plans included use native species and intentionally mimic the character of the adjacent landscape in order to minimize and mitigate the Project's visual impact. These strategies have been developed to provide solutions that appropriately fit both the scale of the Project and the visual character of the specific setting.

The first key step in the mitigation of a proposed solar project is to incorporate retention of existing vegetative material into the early design. Removing vegetation from a facility site can result in a strong visual contrast between the project and the surrounding environment (Sullivan and Abplanalp, 2013). Retaining existing vegetation wherever feasible, particularly along roadways and property lines, allows a more thoughtful and complete mitigation strategy that preserves the visual and ecological character of the surrounding landscape. The Project plans to retain existing vegetation and does not plan to clear any windrows or forested areas.

In some locations there may be no existing woody vegetation, or it may be necessary to selectively remove vegetation. In these areas, adding native trees and shrubs can help to create visual continuity while reducing visibility of the Project. While the use of native shrubs and trees will not necessarily result in plantings that completely screen views of the project (see Design Methodology below), it will serve to soften the overall visual effect and help to better integrate the PV arrays into the surrounding landscape. In addition, use of native plant species provides ecological benefits, such as food and cover for local wildlife communities.

2.0 Design Methodology

The design methodology presented in this plan uses conceptual planting modules based on typical situations found throughout the facility area. These modules are intended to be broadly repeatable, yet flexible in design so that they can respond to the specific conditions at each planting location. While the planting modules are not designed to completely screen all views of the proposed project, the introduction of native tree and shrub mixes interspersed with pollinator-friendly herbaceous plants along roadsides and at sensitive property boundaries will soften the visual effect of the project with natural forms and colors that divert attention from the modern materials and inorganic forms of the PV panel arrays.

These strategies were developed using the following methodology:

- *Review local zoning guidelines.*
- *Document existing visual character and vegetation within the project site and surrounding area.*
- *Take design and material cues from the surrounding landscape.*
- *Maintain open roadsides and vistas where possible.*
- *Maintain existing vegetation/hedgerows where feasible.*
- *Soften the appearance of the perimeters of the PV arrays/fences so that they blend into the existing landscape.*
- *Install native, noninvasive species that provide ecological benefits.*

Berms, Opaque Enclosures, and Evergreen Hedges

Visual mitigation for solar facilities can include installing earthen berms, opaque enclosures (such as vinyl fencing or similar), and/or a screening hedge made up of evergreen trees. These approaches can be effective in fully screening views of a project and may be appropriate in certain urban or suburban settings. In a rural/agricultural setting, however, the use of berms, opaque enclosures, or evergreen hedges would introduce new visual elements into the landscape that would be inconsistent with the character of the existing visual environment and therefore result in unnecessary visual impacts. In this sense, such interventions would not achieve the goal of minimizing visual discontinuity resulting from the project. In addition, there are no design configurations or solutions using these types of screening measures that would allow the project to be fully screened from view without resulting in additional environmental impacts. For example, the construction of berms would require large areas of soil disturbance, which is contrary to the design objective of solar projects to minimize soil disturbance to the greatest extent practicable and could interfere with current or future agricultural uses of the site. Consequently, no such treatment is proposed as visual mitigation in this plan. As indicated in the description of the proposed planting modules (see Section 4.0), the proposed installation of evergreens will be intermittent, which is in keeping with the existing visual character of the visual study area.

Pollinator-Friendly Grasses and Wildflowers

Planting pollinator-friendly species can aid in the aesthetics of a solar facility while also providing habitat for wildlife such as hummingbirds, butterflies, and bees (Eskew, 2018; NYSERDA, 2019; Scenic Hudson, 2018; Walston, et

al., 2018). In agricultural settings, which include areas characterized by open fields and unimpeded long-distance views, the use of tall native grasses and wildflowers along selected roadsides can soften the appearance of a project and match the character of these areas, better integrating the project into the landscape. Regionally appropriate herbaceous plantings are included in all of the proposed conceptual planting modules to provide habitat for pollinator species around the periphery of the site and/or in locations on site where mowing can be restricted during the summer months. Pollinator habitat seed mixes can provide the additional aesthetic benefit of colorful blossoms, particularly in the late spring, summer, and fall months. In addition to softening the appearance of the project, leaving these plants un-mowed during the summer provides benefits to pollinators, habitat for ground nesting/feeding birds, and cover for small mammals.

Native Shrubs and Trees

An alternative to berms and evergreen hedges, which may not appear natural or appropriate in many settings, is the use of native shrub and tree plantings between adjacent roads/resources and the fencing that encloses the solar arrays. A well-designed solar facility should include a planting plan with thoughtful selection of appropriate, native plants installed in locations that will screen or soften views of the facility from adjacent properties or roadways. The selection of plant materials is an important consideration not only for aesthetics but also to provide habitat for pollinators and other wildlife (Eskew, 2018; Walston, et al., 2018).

3.0 Selection of Vegetative Materials

When designing a conceptual planting plan, it is important to propose a site-specific selection of plant materials that will provide the appropriate level of vegetative screening, match the vegetation and visual character of the existing landscape, and prioritize the use of native species. To create the master plant list for the Project, EDR began with field reconnaissance to document existing vegetation along roadsides, within hedgerows, and installed around residential properties within the project area. These on-site observations, combined with information from The Ohio State University's Department of Plant Pathology website, the USDA PLANTS website, the *Selected Ohio Native Plants for Landscape and Restoration Use* guides provided by the Ohio Department of Natural Resources (DNR), the Ohio Department of Transportation's Statewide Roadside Pollinator Habitat Program Restoration Guidelines and Best Management Practices, and the Ohio Department of Agriculture's Prohibited Invasive Plant list provided the basis for the plant material to be included in the master plant list.

Existing vegetation in the visual study area consists largely of agricultural crops, including row crops such as corn and soybeans. Forested areas also occur throughout the visual study area. These areas range from small woodlots and hedgerows, which divide agricultural fields, to more substantial forested areas that occur primarily along stream corridors. Larger forested areas occur in the southeastern portion of the visual study area, associated with Hueston Woods State Forest. Forest vegetation is primarily deciduous (maple, oak, walnut, beech, sycamore, dogwood, and hickory) mixed with some conifers.

Examples of potential plant species to be used at the Project


Eastern Red-Cedar


Eastern White Pine


Bur Oak


Sweet Gum


Black Chokeberry


Downy Serviceberry


Eastern Redbud


Gray Dogwood


Common Milkweed


White Wild Indigo


Purple Coneflower


Prairie Dock


Rattlesnake Master


Dense Blazing Star


Wild Bergamot


Common Mountain Mint


Showy Goldenrod


New England Aster


Ohio Spiderwort


Butterflyweed

4.0 Planting Modules

Angelina Solar, in coordination with EDR, has developed four individual planting modules, each designed to apply to a specific circumstance within the project, as described below.

Module 1 - Pollinator Extension

This module is designed to go in the areas of least visibility around the PV arrays. These areas include back fields with large setbacks and areas where the adjacent use is either a forest stand or an active agricultural field. The design uses the same low-growing seed mix that will be used under the PV panels, extending that mix beyond the fence to cover any soils disturbed during construction. The goal of Module 1 is to reestablish an ecological buffer at the edges of the Project that entices pollinators and small animals as well as providing a softening of the horizontal line created by the bottom of the fence.

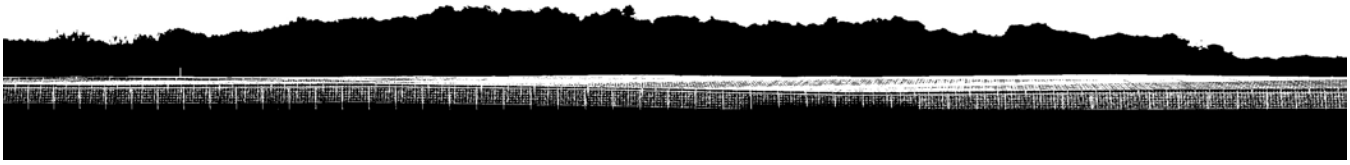
Module 2 - Pollinator Habitat

This module is designed to go in areas with potentially high visibility, but a limited number of viewers. This includes the setback area along small roads and similar locations throughout the project site. A special seed mix of native pollinator habitat plants will be used for this module. This mix will provide larger plant material than is included in Module 1, and will require a different maintenance schedule. The goal of Module 2 is to provide both an ecological benefit and visual screening along the proposed fence line in areas of potentially high visibility but low viewership.

Module 3 - Vertical Softening

This module is designed to be used in areas where there is both potential for visibility and a significant number of viewers present, but where these viewers are not typically stationary or partaking in passive recreational activities. This occurs along major roadways and along select fencelines. The goal of Module 3 is to visually break up the Project's introduced horizontal line of man-made material and allow the vegetation and the Project to blend into the vegetated background. The diagram below illustrates the concept of vertical softening.

Foreground figure of existing conditions



Foreground figure of proposed solar project installation

Foreground figure illustrating how the technique of Vertical Softening breaks up the introduction of horizontal lines and helps blend the solar panels into the background

4.0 Planting Modules

Module 4 - Adjacent Resource (Residence)

This module is designed to be used where stationary adjacent uses are impacted by the installation of the PV arrays. It provides the greatest amount of screening in both summer and winter conditions by incorporating more evergreen material and using native multi-stem trees and thick deciduous shrubs. The goal of Module 4 is to screen the majority of the project for an adjacent viewer. A 100% opaque screen is not the intent, but rather a living and changing vegetative buffer that allows light to transfer through and does not inappropriately enclose a property.

Please see Conceptual Planting Module design sheets below for further detail.

Module 1 - Pollinator Extension

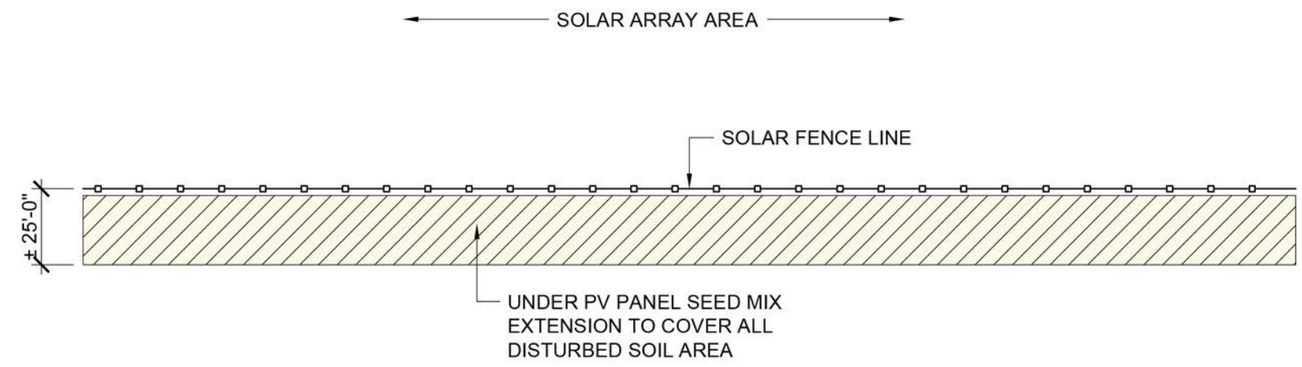
Existing Conditions: Agricultural field or woodlot far from roads or residences

View: Not a common or significant location for views of solar panel arrays

Treatment: Stabilize and restore soil disturbed during fence construction and create additional pollinator habitat

SOLAR FIELD SEED MIX EXAMPLE PLANT LIST			
BOTANICAL NAME	COMMON NAME	BLOOM TIME	MATURE HEIGHT*
Trifolium pratense	Red Clover	Summer	1-2 ft
Meticago sativa	Vernal Alfalfa	Summer	2-3 ft
Chamaecrista fasciculata	Partridge Pea	Spring	1-3 ft
Trifolium repens	White Clover	Spring	4-6 in
Trifolium hybridum	Alsike Clover	Summer	2-4 ft

*Mature size range references resources provided by the USDA NRCS. Heights will vary by season.

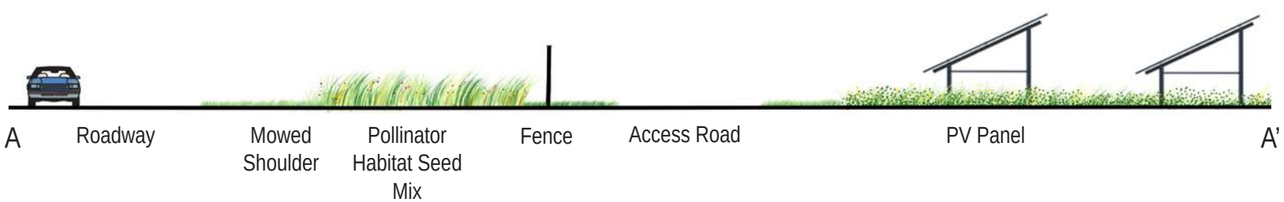


Module 2 - Pollinator Habitat

Existing Conditions: Agricultural field, no existing hedgerow or vegetation

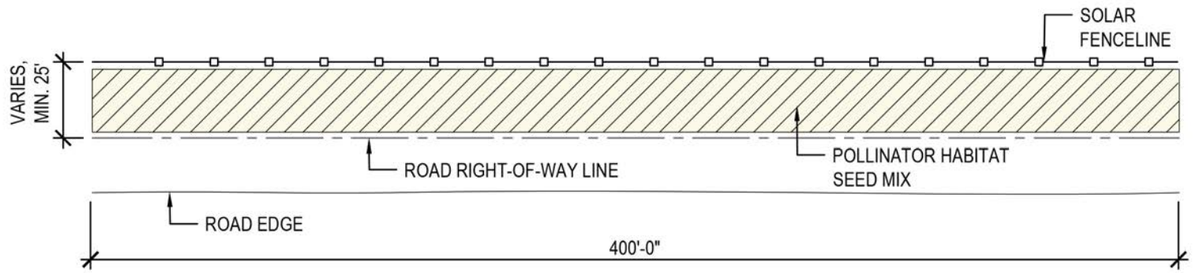
View: Open views towards agricultural field with solar panel arrays

Treatment: Create buffer of perennial prairie plants to soften view of solar panels within landscape and create additional pollinator habitat



POLLINATOR HABITAT SEED MIX EXAMPLE PLANT LIST			
BOTANICAL NAME	COMMON NAME	BLOOM TIME	MATURE HEIGHT*
Asclepias tuberosa	Butterflyweed	Summer	1-2 ft
Asclepias syriaca	Common Milkweed	Summer	3-5 ft
Baptisia alba	White Wild Indigo	Spring	2-3 ft
Echinacea purpurea	Purple Coneflower	Summer	2-4 ft
Eryngium yuccifolium	Rattlesnake Master	Summer	4-5 ft
Liatris spicata	Dense Blazing Star	Summer	2-4 ft
Monarda fistulosa	Wild Bergamot	Summer	2-4 ft
Pycnanthemum virginianum	Common Mountain Mint	Summer	2-3 ft
Schizachyrium scoparium	Little Bluestem	Autumn (grass)	2-4 ft
Silphium terebinthinaceum	Prairie Dock	Late Summer	2 ft, flowers to 10 ft
Solidago speciosa	Showy Goldenrod	Late Summer	2-3 ft
Sorghastrum nutans	Indian Grass	Autumn (grass)	3-5 ft
Symphyotrichum novae-angliae	New England Aster	Autumn	3-6 ft
Tradescantia ohiensis	Ohio Spiderwort	Spring	2-3 ft
Zizia aurea	Golden Alexanders	Spring	2-3 ft

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO). Heights will vary by season.



Module 3 - Vertical Softening

Existing Conditions: Agricultural fields, no existing hedgerow

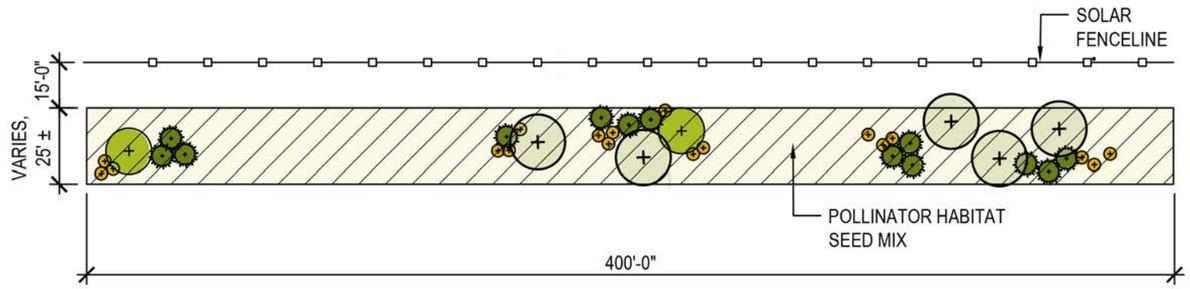
View: Open views towards agricultural field with solar panel arrays

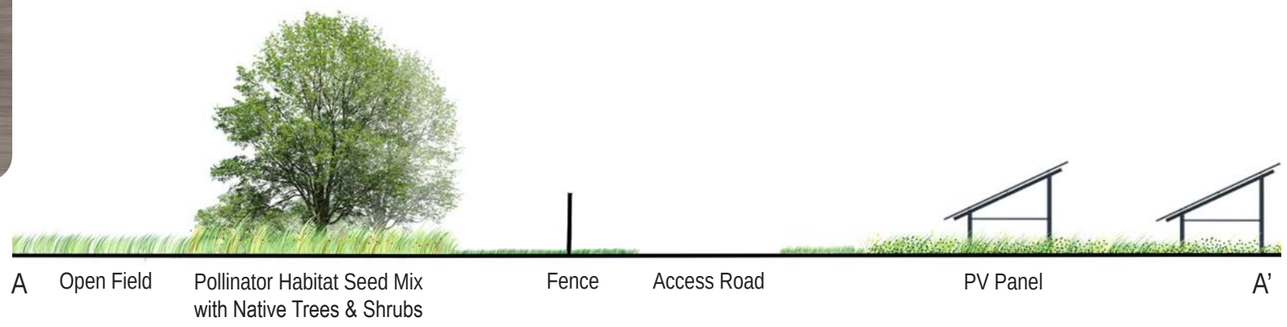
Treatment: Create buffer of prairie plants and native trees to soften view of solar panels within landscape

MODULE 3 PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	SIZE	TYPE	MATURE SIZE*
+	*Aesculus glabra*	Ohio Buckeye	1 1/2" cal.	B&B	20-40' H x 20-40' W
+	*Aronia melanocarpa*	Black Chokeberry	36" ht	B&B	3-8' H x 3-6' W
+	*Juniperus virginiana*	Eastern Red-Cedar	5' ht	B&B	40-50' H x 8-20' W
+	*Liquidambar styraciflua*	Sweet Gum	1 1/2" cal.	B&B	60-75' H x 40-75' W
	Pollinator Habitat Seed Mix		10 lbs per acre		Average 36" H

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).





Module 4 - Adjacent Resource (Residence)

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

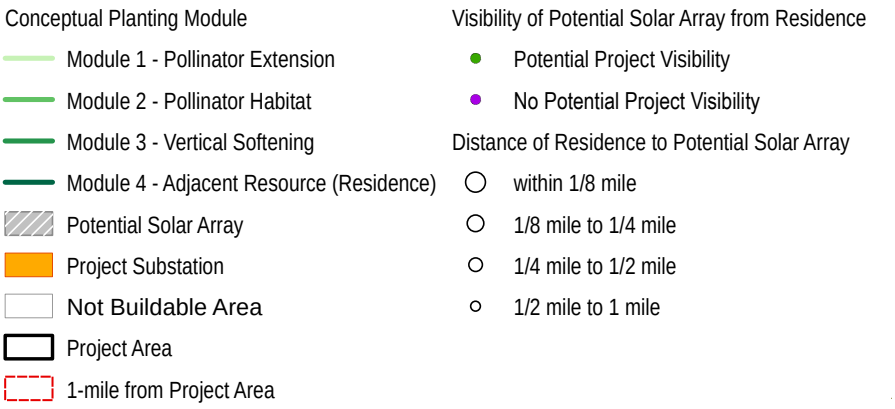
Treatment: Create buffer to soften view of solar panels within landscape

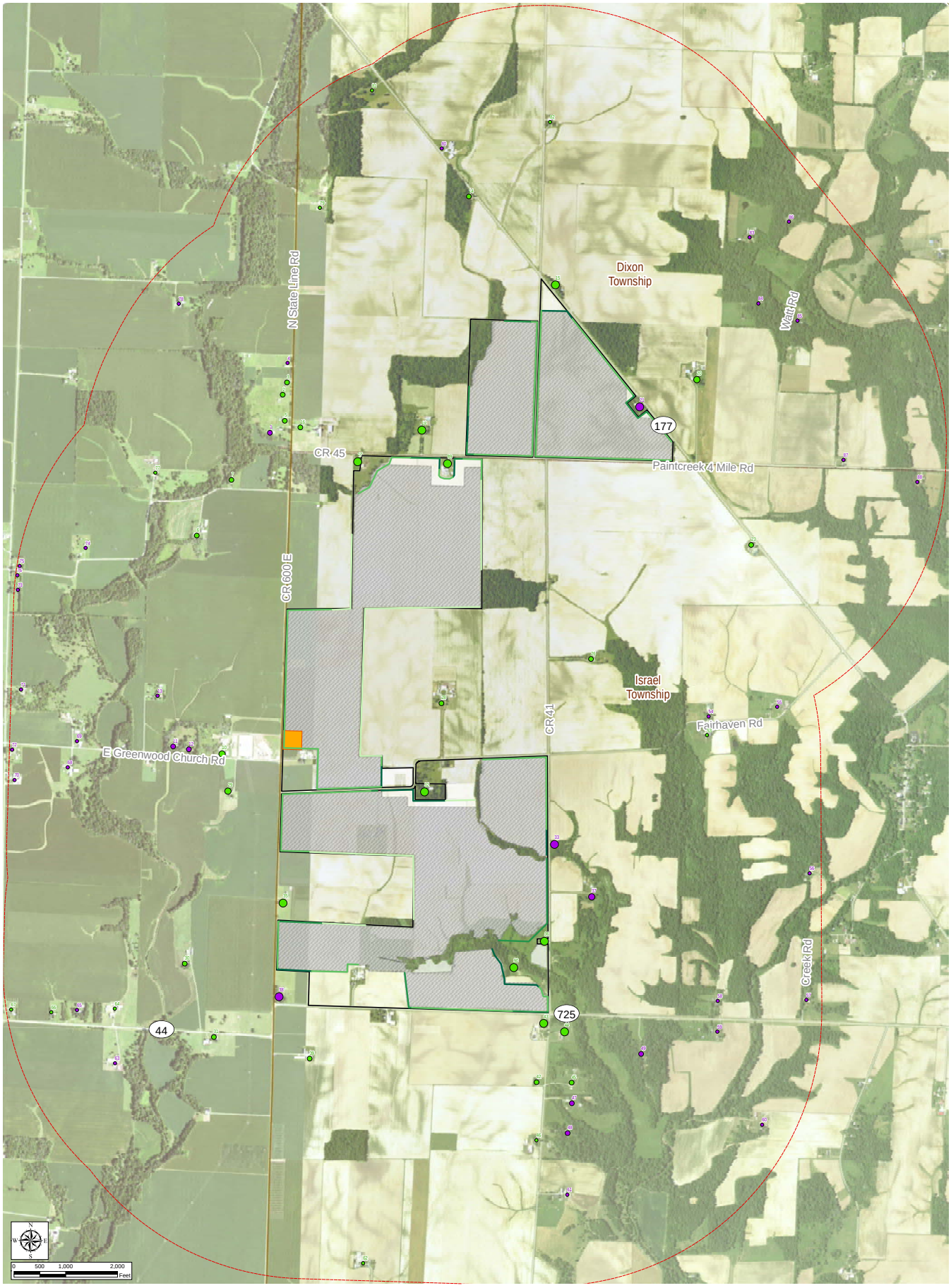
MODULE 4 PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer rubrum	Red Maple	1 1/2” cal.	40-60’ H x 35-45’ W
	Acer saccharum	Sugar Maple	1 1/2” cal.	60-75’ H x 40-50’ W
	Amelanchier arborea	Downy Serviceberry	6’ ht.	15-25’ H x 15-25’ W
	Cercis canadensis	Eastern Redbud	6’ ht.	20-30’ H x 25-35’ W
	Cornus racemosa	Grey Dogwood	3’ ht.	10-15’ H x 10-15’ W
	Juniperus virginiana	Eastern Red-Cedar	5’ ht.	40-50’ H x 8-20’ W
	Pinus strobus	Eastern White Pine	5’ ht	50-80’ H x 20-40’ W
	Quercus macrocarpa	Bur Oak	1 1/2” cal.	60-80’ H x 60-80’ W
	Sassafras albidum	Sassafras	6’ ht.	20-30’ H x 25-40’ W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

5.0 Location of Planting Modules

EDR landscape architects used desktop and field analysis, municipal regulations, and outreach responses to guide delineation of proposed planting areas around facility components. The goal in selecting locations for plantings is to prioritize locations where otherwise open or uninterrupted views of the PV arrays had the potential to result in substantial visual effects. These areas include open fields adjacent to roadsides, thin/partial hedgerows abutting neighboring residences, and areas adjacent to residences and/or resources throughout the project area.



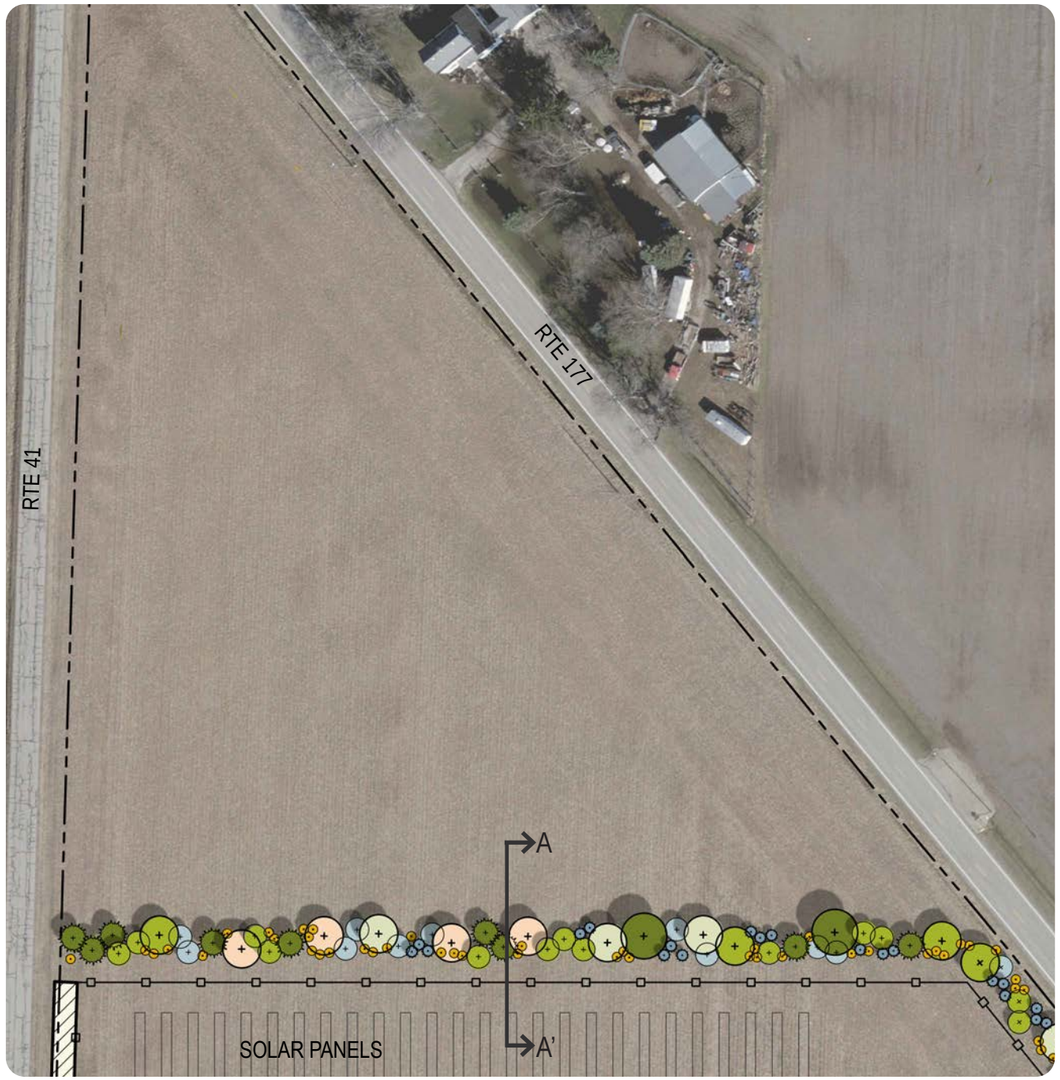

N State Line Rd
Dixon Township
Wath Rd
177
CR 45
Paintcreek 4 Mile Rd
CR 600 E
Israel Township
CR 41
Fairhaven Rd
E Greenwood Church Rd
Creek Rd
725
44
0 500 1,000 2,000
Feet

Property Number | 15

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape; use planting module 2 along Rte 41



PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Liquidambar styraciflua	Sweet Gum	1 1/2" cal.	60-75' H x 40-75' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W
	Pollinator Habitat Seed Mix		10 lbs per acre	Average 36" H

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 21

Existing Conditions: Residence adjacent to proposed solar array field, existing hedgerow on owner's property

View: Currently very little view of proposed solar panel arrays

Treatment: Create buffer on project site property to ensure continued screening of view of solar panels in future

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Liquidambar styraciflua	Sweet Gum	1 1/2" cal.	60-75' H x 40-75' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W
	Pollinator Habitat Seed Mix		10 lbs per acre	Average 36" H

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 32

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Abies concolor	White Fir	6' ht.	40-70' H x 20-30' W
	Acer rubrum	Red Maple	1 1/2" cal.	40-60' H x 35-45' W
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Picea glauca	White Spruce	6' ht.	40-60' H x 10-20' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	20-30' H x 25-40' W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 33

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

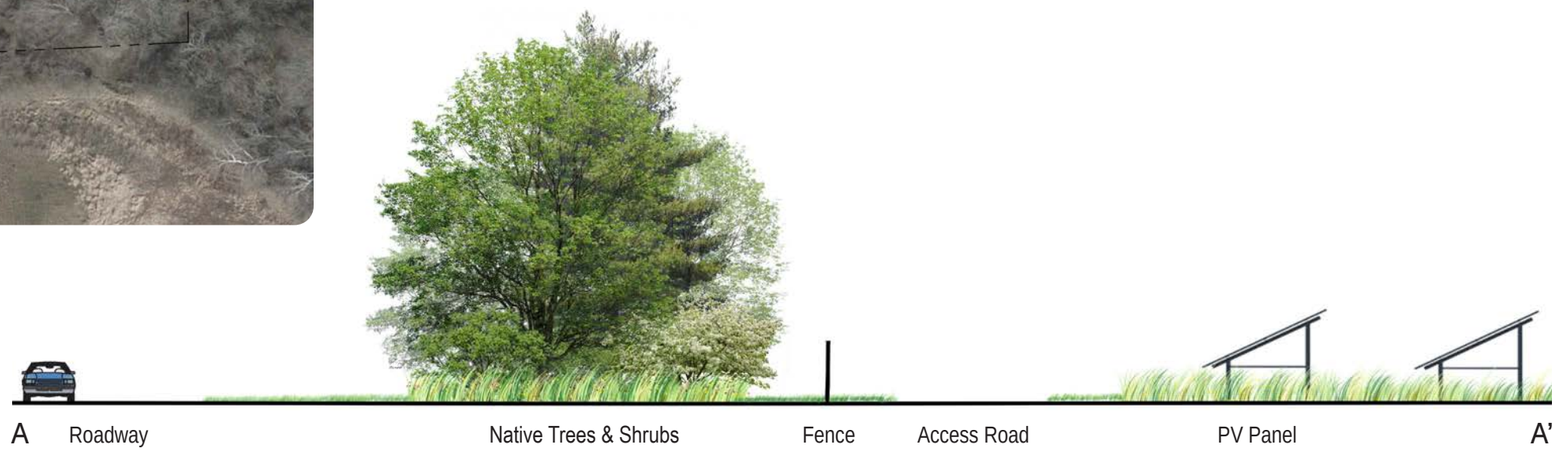
View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer saccharum	Sugar Maple	1 1/2" cal.	50-80' H x 35-40' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Liquidambar styraciflua	Sweet Gum	1 1/2" cal.	60-75' H x 40-75' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).



Property Number | 36

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer rubrum	Red Maple	1 1/2" cal.	40-60' H x 35-45' W
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 37

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25" H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Liquidambar styraciflua	Sweet Gum	1 1/2" cal.	60-75' H x 40-75' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 43

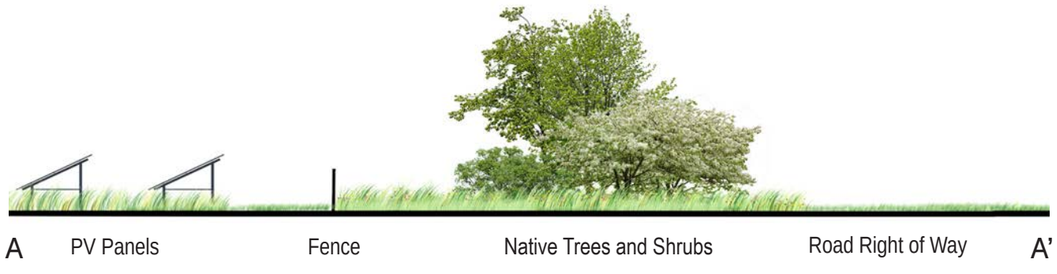
Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array, overhead power lines at road

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25" H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Pollinator Habitat Seed Mix		10 lbs per acre	Average 36" H

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).



Property Number | 89

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer saccharum	Sugar Maple	1 1/2” cal.	60-75’ H x 40-50’ W
	Amelanchier arborea	Downy Serviceberry	6’ ht.	15-25’’ H x 15-25’ W
	Cercis canadensis	Eastern Redbud	6’ ht.	20-30’ H x 25-35’ W
	Cornus racemosa	Grey Dogwood	3’ ht.	10-15’ H x 10-15’ W
	Juniperus virginiana	Eastern Red-Cedar	5’ ht.	40-50’ H x 8-20’ W
	Liquidambar styraciflua	Sweet Gum	1 1/2” cal.	60-75’ H x 40-75’ W
	Pinus strobus	Eastern White Pine	5’ ht	50-80’ H x 20-40’ W
	Quercus macrocarpa	Bur Oak	1 1/2” cal.	60-80’ H x 60-80’ W
	Sassafras albidum	Sassafras	6’ ht.	20-30’ H x 25-40’ W
	Pollinator Habitat Seed Mix		10 lbs per acre	Average 36” H

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Property Number | 90

Existing Conditions: Residence adjacent to proposed solar array field, no existing hedgerow

View: Open views towards agricultural field with solar panel array

Treatment: Create buffer to soften view of solar panels within landscape, using formal aesthetic at driveway with transition to naturalistic hedge closer to house.

PLANT LIST				
KEY	BOTANICAL NAME	COMMON NAME	INITIAL SIZE	MATURE SIZE*
	Acer rubrum	Red Maple	1 1/2" cal.	40-60' H x 35-45' W
	Acer saccharum	Sugar Maple	1 1/2" cal.	60-75' H x 40-50' W
	Amelanchier arborea	Downy Serviceberry	6' ht.	15-25' H x 15-25' W
	Cercis canadensis	Eastern Redbud	6' ht.	20-30' H x 25-35' W
	Cornus racemosa	Grey Dogwood	3' ht.	10-15' H x 10-15' W
	Juniperus virginiana	Eastern Red-Cedar	5' ht.	40-50' H x 8-20' W
	Pinus strobus	Eastern White Pine	5' ht	50-80' H x 20-40' W
	Quercus macrocarpa	Bur Oak	1 1/2" cal.	60-80' H x 60-80' W
	Sassafras albidum	Sassafras	6' ht.	20-30' H x 25-40' W

*Mature size range references resources provided by the Morton Arboretum (Lisle, IL), and Missouri Botanical Garden (St. Louis, MO).

Conclusions

In summary, while the conceptual planting plan described here is not designed to completely screen views of a proposed project, the introduction of native tree and shrub mixes interspersed with pollinator plants along the roadsides/resources adjacent to the project will provide a visual buffer of natural vegetation between the project and the viewer. These natural forms and colors are intended to divert attention from the modern materials and inorganic forms of the PV panel arrays. As demonstrated in the visual simulations included in the Angelina Solar OPSB Application, the installation of a proposed planting plan, upon reaching maturity, would better integrate the PV arrays into the character of the existing landscape.

Summary: Testimony Supplemental Testimony of Matthew Robinson electronically filed by Mr. Michael J. Settineri on behalf of Angelina Solar I, LLC